
2002 Army Modernization Plan

Overview

Today's Army is fully prepared to serve the Nation and stands ready to fulfill all missions required in the current security environment. The changing nature of that security environment, however, and the potential for dramatic advances through new technologies present the need and opportunity to transform the Army into an even more responsive and effective force for the future. Responding to this opportunity, the Army leadership has embarked on a dramatic process of change—Transformation—to make a great Army even better and more relevant.

The Army continues to make significant progress in transforming itself into an Objective Force, which is strategically responsive and dominant at every point on the spectrum of conflict. Attaining an Objective Force capability requires the Army to make significant investments in science and technology and then make the critical decisions on which technologies to resource, thereby ensuring that our Soldiers will have the best equipment in the world. Successful transformation, however, is more than equipment—it is the integration of equipment, doctrine, training, infrastructure, and the development of Soldiers and their leaders into combat-capable units, which will decisively win the wars of the 21st Century.

At the same time the Army invests in the Objective Force of the future, it continues to give the highest priority to the immediate military needs of the Nation.

Maintaining current warfighting readiness requires the Army to invest in today's force—the Legacy Force—by recapitalizing key systems and selectively modernizing as required to maintain combat superiority or overmatch on the battlefield until the Objective Force is fully realized. The Army's Interim Force, designed to fill a capabilities gap that exists in today's Legacy Force, will allow the Army to rapidly deploy anywhere in the world with a lethal, survivable and sustainable combat capability. The concurrent requirements of the Objective, Legacy and Interim Forces present a significant resource challenge to the Army. It is a challenge the Army will meet as it fulfills its nonnegotiable contract with the American people to fight and win our Nation's wars.

The Army is successfully implementing the Transformation process begun in October 1999 and has established sustainable momentum on the path to a more strategically responsive and dominant land force. Since the publication of the *2001 Army Modernization Plan*, the Army has:

- Continued its aggressive pursuit of new technologies by engaging in active partnership with industry and government agencies, as well as by establishing a new high-level task force to integrate Army plans for the Objective Force.

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- Committed to modernizing the Soldier as a System as the Army transforms to the Objective Force.
 - Resourced a recapitalization program of 17 critical systems designed to improve the warfighting readiness of its Legacy Force.
 - Initiated the Unit Set Fielding process, integrating a “system of systems” approach to materiel fielding that provides a total operational capability to units, not just new pieces of equipment.
 - Started the fielding of the first two Interim Force brigades at Fort Lewis, Washington. Beginning with the second of the two brigades, the Army will use the Unit Set Fielding concept to transform, field and train on new equipment.
 - Continued the aggressive training pace of the first Interim Brigade at Fort Lewis by using loaner and surrogate vehicles and successfully developed the Interim Force tactics, techniques and procedures to be used by the remaining Interim Force brigades.
 - Identified the previously planned four additional Interim Force brigades and is examining the possibility of placing several of those brigades under the command and control of an Interim Force Division.
 - Capitalized on the Interim Brigade Combat Team (IBCT) organization, training, and lessons learned by developing an Interim Cavalry Regiment concept, which is designed to enhance the warfighting capabilities of the Army’s 2nd Armored Cavalry Regiment (Light).
 - Developed the doctrinal foundation for the Objective Force with the publication of two key documents: Field Manual 3-0 *Operations*, which is the Army’s keystone doctrine for full spectrum operations, and the United States Army White Paper: *Concepts for the Objective Force*, which provides government, industry and academia with a broad overview of the advanced capabilities and core technologies needed to enable the Objective Force.
 - Made difficult and challenging decisions by prioritizing and reallocating scarce resources, and canceling and modifying programs. This includes reducing the number of systems being recapitalized from 21 to 17 and canceling a total of 18 programs for systems required by the Army. These actions correspondingly increase risks in readiness, but are considered acceptable to allow increased emphasis on Transformation.
 - Additionally, the Army is pursuing reforms to improve business practices and operational efficiencies as a vehicle for achieving further savings.
- While continuing to transform itself into an even more capable force, the Army—Active, Guard, Reserve, and civilians—remains firmly grounded in its enduring commitment to be ready at all times to fulfill the immediate security requirements of the United States. The Army is already at the forefront of the global war on terrorism, from domestic civil and military support as part of homeland security to overseas deployments and missions of special operations and conventional forces. At the same time, the Army is

fulfilling its critical role of forward presence and engagement with allies and partners overseas, while remaining ready to respond to any contingencies in support of the National Military Strategy.

Bipartisan support from Congress and the continued endorsement of the Department of Defense (DoD) has given the Army the impetus and a down payment on resources needed to get Transformation underway and firmly embedded in Army plans and programs, while still preserving the capability to perform today's missions.

To achieve the goals of Transformation—greater responsiveness and dominating capabilities—the Army pursues a Modernization Strategy that focuses on producing and fielding revolutionary new capabilities for the future force, fulfilling immediate operational capability shortfalls with new systems and organizations in the near term, and maintaining and improving those essential capabilities needed to fulfill all missions in the foreseeable future. To implement this strategy, the Army must make difficult choices and establish clear priorities among competing needs—the goal of the Army's Investment Strategy. This strategy is characterized by a shift in emphasis to the development of new systems and technologies to support the future Army, or Objective Force. At the same time, however, the strategy attempts to balance modernization efforts and strategic risks by maintaining essential readiness and capabilities for the Army of today, particularly for the urgent fight against terrorism that is ongoing at home and abroad. The final balance in this Investment Strategy is reflected in the Army component of the FY

2003 President's Budget (PB03), which reflects the clear priorities and choices the Army has identified and made to implement Transformation.

Significant progress has been made in the past two years in implementing Transformation, though shortfalls do exist. Transformation is a continual and long-term process, and the Army needs sustained support and additional resources to maintain the momentum already established for moving towards a transformed force while simultaneously preserving today's readiness and successfully prosecuting the war on global terrorism.

Purpose

The *2002 Army Modernization Plan's* purpose is to effectively and efficiently support Army Transformation in order to deliver future readiness characterized by a force that is responsive, deployable, agile, versatile, lethal, survivable, and sustainable at every point on the spectrum of operations. The *2002 Army Modernization Plan*, like the 2001 plan, focuses on building combat-capable units to support the Transformation of the Army and ensuring that the Army continues to maintain sufficient capabilities in all areas necessary to win our Nation's wars decisively and protect our vital national interests in whatever ways needed. Along with the *Army Science and Technology Master Plan*, it provides the rationale and justification for the research, development, and acquisition (RDA) portion of the Army's program in support of PB03. Furthermore, it is fully consistent with and supportive of implementing the guidance of the Army

leadership, which is reflected separately in *The Army Plan* as well as in the annual *Army Posture Statement*. Specifically, the *Modernization Plan*:

- Describes Army Transformation, its progress to date, and how the Army Modernization Strategy supports Transformation.
- Describes the future operational environment and the future warfighting concepts the Army is expected to use in that environment.
- Explains how Army Transformation and its implementation are supported by modernization efforts across the entire breadth of Doctrine, Training and Leader Development, Organization, Materiel, and Soldier Support (DTLOMS).
- Focuses modernization through the application of:
 - Unit Set Fielding
 - Software Blocking
- Describes the Army's Modernization and Investment Strategies.
- Provides information on selected programs that are critical to Transformation efforts.
- Communicates Fiscal Year 2003 (FY03) budget priorities, key accomplishments and remaining shortfalls, and shapes conditions for Army budget planning for future years.

The *Modernization Plan* does not offer the following:

- Specific details on all RDA programs, to include system programatics

(dollars, quantities). This information is provided in other documents to include the *U.S. Army 2002 Weapon Systems Handbook*.

- Specific commitment for budget figures beyond FY03. Any information reflected for these years represents an Army planning estimate and is subject to change.
- Modernization schedules for specific units that are published and disseminated separately.

Strategic Environment and New Direction

The Army's decision to transform itself is a direct result of an appreciation of the changing strategic environment. That changing environment coupled with the potential of dramatically evolving and even revolutionary new technologies presented the imperative and opportunity for significant change for the Army at this point in history. In the *2001 Army Modernization Plan*, considerable attention was devoted to a discussion of the emerging geo-strategic environment of persistent instability characterized by ethnic rivalries, nationalism, and increasing transnational threats such as terrorist networks. In fact, the observation was made that the most dangerous challenge to U.S. interests would likely be from "combinations of state, non-state, and transnational actors with global reach." Unfortunately, this analysis proved to be all too true in September 2001, and the future strategic environment quickly became an immediate reality. (*Figure 1*)



Figure 1. Strategic Environment

Quadrennial Defense Review and New Defense Strategy

The Quadrennial Defense Review (QDR), which was mandated by Congress, tasks the DoD with defining a defense strategy very early in a newly inaugurated President's administration. This review includes force structure and programs required to implement that strategy at low-to-moderate risk over the ensuing 20 years. The 2001 QDR laid the foundation for a defense strategy that better aligns requirements with available capabilities. It provided strong support for Army Transformation, excess infrastructure reduction, and Soldier quality of life improvements. It did not, however, provide any programmatic or budget decisions. The 2001 QDR was largely completed before the 11 September terrorist attacks on the United States, though those events served to punctuate strongly its results and relevance for the future. The final product released on 30

September represented a clear path for future defense policies.

As part of the assessment of the global security environment, the QDR stressed the need for the Services to transform themselves so they could meet the challenges of the future operational environment and improve or maintain U.S. military preeminence. The overarching goal is to transform while still maintaining near-term readiness, the well being of our people, and the quality of our installations. Within this overall construct, six critical operational goals intended to focus DoD's transformation efforts more specifically are identified in the report:

- Protecting critical bases of operations (U.S. homeland, forces abroad, allies and friends) and defeating chemical, biological, radiological, nuclear, and enhanced high explosive (CBRNE) weapons and their means of delivery;

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- Assuring information systems in the face of an attack and conducting effective information operations;
 - Projecting and sustaining U.S. forces in distant anti-access or area-denial environments and defeating anti-access and area-denial threats;
 - Denying enemies sanctuary by providing persistent surveillance, tracking, and rapid engagement with high-volume precision strike, through a combination of complimentary air and ground capabilities, against critical mobile and fixed targets at various ranges and in all weather and terrains;
 - Enhancing the capabilities and survivability of space systems and supporting infrastructure; and
 - Leveraging information technology and innovative concepts to develop an interoperable, joint command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) architecture and capability that includes a tailorable joint operational picture

The Army's comprehensive plan to transform itself has already set in motion support for the goals stated above by ensuring the Army, through its core competencies, has the capability to decisively defeat the enemy on the future battlefield with forces that are strategically responsive, deployable, agile, versatile, lethal, survivable and sustainable. In consonance with these goals, the Army must also maintain the ability to conduct tactical assault at the ultimate decision point in any conflict. Employing air and ground sensors, and capitalizing on internetted C4ISR at all tactical and

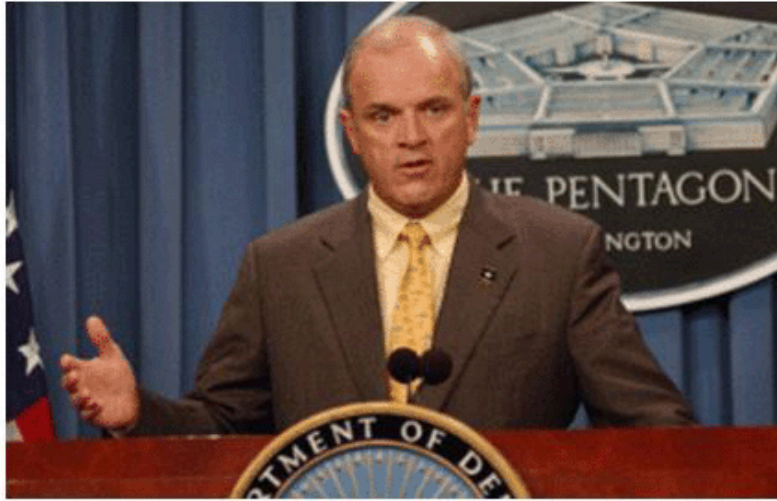
operational echelons of employment, the Army's Objective Force will "see first, understand first, act first and finish decisively." Strategically responsive, highly deployable and with a reduced logistics footprint, the Objective Force will be able to effectively operate in anti-access and area denial environments. It will maintain the Army's current forced-entry capabilities.

As development of Objective Force systems and programs continue, the Army fully expects to provide considerable support for the DoD Operational Goals articulated in the 2001 QDR.

Homeland Security

Possibly the most significant new outcome of the QDR is the identification of homeland security as the highest priority for the U.S. military. Increased fears of potential asymmetric threats and an increased pace and scale of ballistic missile proliferation raised concerns about the domestic vulnerability of the United States. The attacks of 11 September 2001 converted potential threats to clear and present danger. Translating this new priority into institutionalized roles and resources for both civilian and DoD government agencies requires considerable work. The Army is a key participant in the complementary missions of preventing, protecting and responding to threats to the territorial United States. Signifying the importance of the Army's role in this mission, the Secretary of Defense named the Secretary of the Army as DoD's interim executive agent for homeland security (*Figure 2*). The Army, as part of the DoD team, is adjusting its structure

Homeland Security



The Honorable Thomas E. White, Secretary of the Army answers a question about Homeland Security press conference Oct. 26. Secretary White was named Interim DoD Executive Agent for Homeland Security Oct. 2.

Figure 2. Homeland Security

and programs to fulfill these new responsibilities. Army Transformation is fully capable of incorporating any necessary adjustments to meet this new mission, and this *Modernization Plan* incorporates a new annex on Homeland Security to discuss the progress to date.

The Army's Role in the National Military Strategy and Joint and Combined Operations

The Army remains the primary provider of land forces to the Joint Force Commander (JFC) for all of the possible missions identified in the QDR. The Army expects that the majority of missions will be joint in nature. Moreover, in those missions requiring overseas deployments, the Army relies on its sister Services for the critical strategic lift, both air and sea, to get to the theater in a timely manner. Close cooperation among the Services to produce joint interoperability and deployability, coupled with a dynamic program of training and

experimentation in peacetime, will be indispensable for the success of the Army's Transformation as well as the respective modernization plans of the other Services. Where possible, cooperative programs with other individual Services and in a joint framework will be highly beneficial and fully supported.

In addition to the imperative for successful joint cooperation, the Army also recognizes that most, if not all, future missions will be characterized by multinational cooperation. Coalitions have been a defining nature of most major military operations in the recent past, from the Gulf War to the Balkan missions, and the likelihood is for this trend to continue and even increase in the future. As a result, the Army views effective international cooperation as an important element in making Transformation successful in both its process and eventual application on future battlefields. Such cooperation will focus on two key and complementary

components—multinational force compatibility or interoperability, and security cooperation.

Future Operational Environment

The future global security environment outlined in the QDR as the basis for defining the U.S. defense requirements and associated strategy is very similar to the operational environment discussed in the *2001 Army Modernization Plan*. As stated in that document, the most dangerous challenges come from a combination of state, non-state, and transnational actors possessing a global reach (Figure 3). The attacks on the United States in September 2001 demonstrated that this challenge is now a reality, not just a potential threat for the future environment. Additionally, the possible use of military power by nations remains an integral factor in the

international environment, and, therefore, any regional crisis retains the potential for escalation into a conflict having implications for U.S. security interests. Moreover, this future security environment presents a situation where military operations will be less predictable in nature and more dynamic in development.

Over the next two decades, U.S. Armed Forces will operate in a geo-strategic environment of considerable instability. Regional powers will grow, new ones will emerge, and transnational actors will arrive on the global scene. Shifting demographics (high population growth causing increased migrations and more pressure on scarce resources), economics (increasing globalization and the spread of transnational business), and technology (widely available advanced systems that are very user-friendly) will drive developed and developing states alike into global networks, altering power relationships within regions.



Figure 3. Operational Environment

Globalization demands international interaction on a wide range of issues, creating friction as cultures, religions, governments, and economies network and collide in a highly competitive global setting. It can also be said with reasonable certainty that during this period, state and/or non-state actors will employ or threaten violent force as a means to pursue their interests. That violence will not be limited to where U.S. forces may deploy, but as 11 September has demonstrated, may also occur in the United States.

The operational environment, characterized by eleven critical variables (Figure 4) and the emerging threats

(shaped in part by the operational environment) that will define the strategic and operational setting for military operations in the next 20 years, will have inherent campaign qualities. For example, if an adversary believes much is at stake, mobilizing all dimensions of his national power is likely. Every person becomes a combatant and every asset a weapon—in short, total war, a concept that cannot be completely dismissed.

This campaign quality extends to the adversary's ability to create, mobilize, develop, and evolve his fighting forces: active, reserve, paramilitary, police and also allows him to adapt. Future campaigns against the United States will

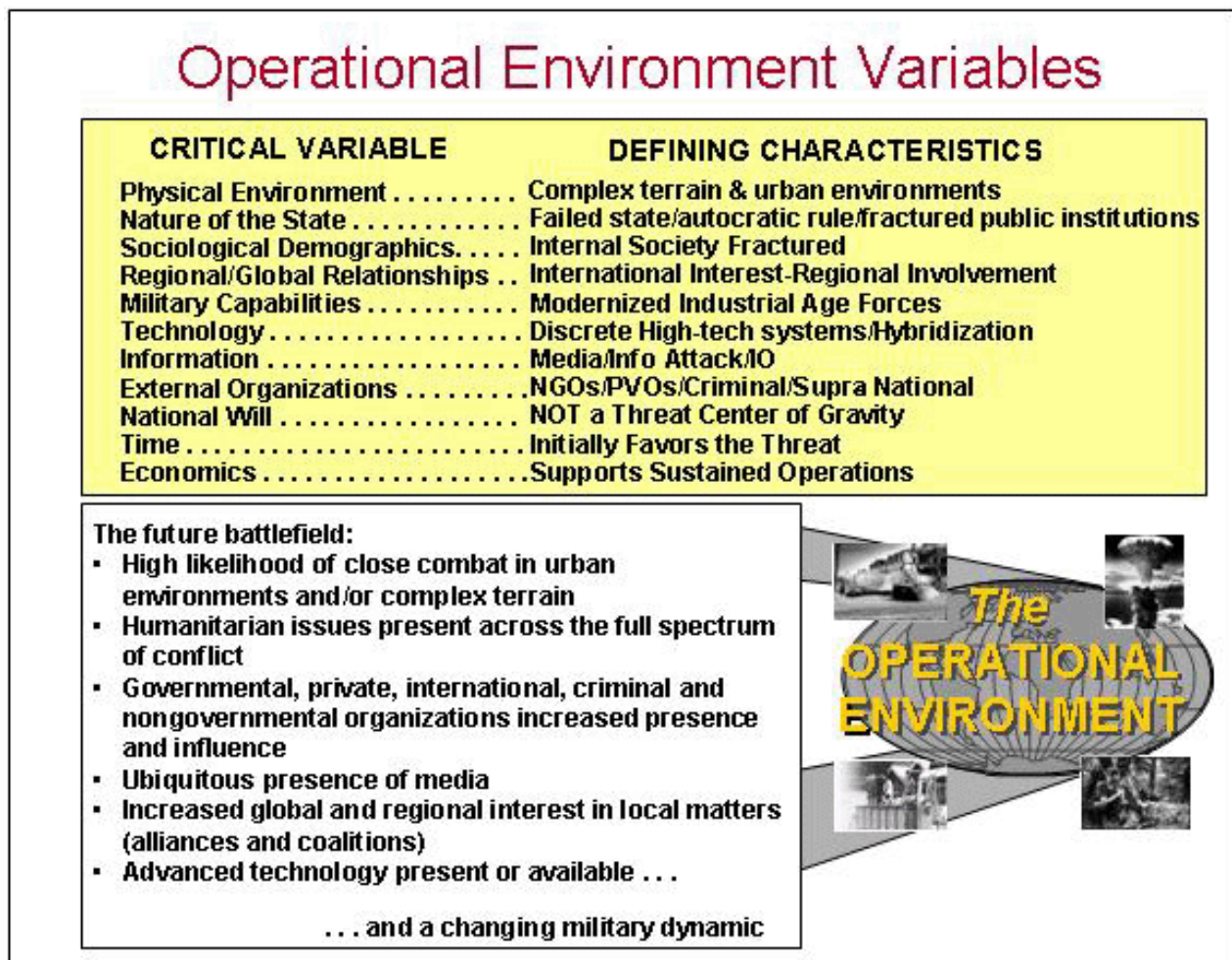


Figure 4. Operational Environment Variables

include a balance of asymmetric, adaptive and conventional operations executed over a time frame that allows the results of the campaign to highlight U.S. strategic vulnerabilities, such as the requirement to rapidly deploy forces to conflict areas.

The United States, at present, is able to eventually dominate any military force it will encounter in the various regions of the world. However, the United States must also be able to deploy to those regions where it will meet those forces. Some adversaries conclude that they can conduct operations below a threshold that would elicit a U.S. military response; others realize that they must attempt to keep the United States from deploying to their regions. To accomplish this goal, several adversaries will use all means possible, military, political, economic and even terrorist attacks on the U.S. or allies' homelands to pressure the United States and its allies from ever deploying forces to intervene in conflict regions. If they are unable to preclude U.S. or allied intervention, they will try to exclude our forces from entry by denying or striking the airbases or seaports our forces will need to conduct operations and sustain their operations. They are likely to employ cruise and ballistic missiles, aircraft and unmanned aerial vehicles (UAVs), special purpose forces and terrorists. If U.S. or allied forces are able to deploy, these adversaries will attempt to delay or stop the flow of U.S. assets and support into an area. If the United States is successful in deploying forces to an area, the enemy will use all of the operational environment factors to influence the conduct of operations. Additionally they will employ any niche technological enhancement in weapons

technology they have been able to integrate into their forces to increase their own capability. Finally, adaptive, learning forces will operate from dispersed and decentralized positions, use extensive cover, concealment, camouflage, denial and deception to complicate U.S. advantages in targeting and long range standoff weapons delivery. The goal of these operations is to create opportunities for their forces to prolong the conflict, cause U.S. casualties and create conditions to end the conflict under conditions favorable to themselves.

In response to the expected security environment, the Army must remain effective across the full spectrum of conflict. This includes responses against both modernized conventional forces, possibly employed in an unconventional manner, as well as unconventional forces employing asymmetric strategies, capabilities, and tactics (*Figure 5*). Army Special Operations Forces (ARSOF) currently operate in this environment by conducting unconventional operations across the full spectrum of operations. As recent events have shown, it is likely that adversaries will seek new means of dealing with U.S. forces, while the Army continues to adapt doctrine, organizations and systems to be prepared to fight adaptive adversaries.

To meet the challenges of the future operational environment, the Army must protect the U.S. homeland while simultaneously providing a strategically responsive force effective across the full spectrum of conflict. Current Army forces, while the best in the world, have deficiencies that must be addressed to form the type of forces required for the new environment. Army forces must



Figure 5. Special Operations Forces

retain a quality of adaptive dominance—the ability to dominate any situation regardless of how an adversary reacts. This adaptive quality will require future forces with inherent versatility and adaptive Soldiers, civilians, and leaders who can account for the critical variables inherent in the future operational environment.

This requirement is the underlying imperative for the Army Vision announced in 1999 and the subsequent Transformation process presently underway. This need for change, coupled with the technological potential for revolutionary advancements, makes substantial change through Army Transformation both essential and an achievable objective.

Army Transformation

Overview and Timeline

The Army Vision is “Soldiers on point for the Nation...Persuasive in Peace, Invincible in War.” This Vision is built on the foundation of the hard work and experiences of previous generations of Army Soldiers, civilians, and leaders, but it also ensures that the Army of today and tomorrow will be prepared to meet

successfully the requirements of the new strategic and operational environment of the 21st Century. Building on the historical lessons learned in the past—especially more recent experiences in Panama, the Gulf, Somalia, Bosnia, and Kosovo—the Army plans to incorporate and take advantage of advanced technologies to adapt itself to future challenges. Three integral components are interwoven in the

Army Vision—Readiness, People, and Transformation—and are indispensable to its eventual success.

Readiness remains the Army's top priority and will be its enduring focus in fulfilling what is termed the "nonnegotiable contract with the American people to fight and win the Nation's wars—decisively." Today's Army has to be prepared to perform a wide range of worldwide missions, ranging from defense of the United States to peaceful engagement and combat operations abroad as required to defend our interests and those of our allies and friends.

People, however, remain the Army's centerpiece and are its investment in and link to the Nation it serves. Soldiers—Active, Guard, and Reserve—backed by the support from the extended community of civilians, family members, retirees, veterans, and contractors represent the ultimate means of fulfilling the Army's duty to the Nation. Their well-being is vital to

the Army's overall capabilities and its ability to conduct all missions assigned. In the final analysis, the realization of the Army's Vision and its associated Transformation will depend directly on our Soldiers and the people who support them.

Transformation represents the necessary change in the Army's nature and composition as well as in the way the Army will fight, and it is a process of change that is well underway. Ultimately this process will produce a future force, the Objective Force, that will be capable of victory in a major theater of war, responsive and flexible for rapid mission tailoring required of crisis response, versatile for success in stability and support operations, and durable enough for extended regional engagement. It will be interoperable as a member of a joint and possibly multinational team. This force is further defined by its ability to deploy a combat brigade in 96 hours, a division in 120 hours, and five divisions in

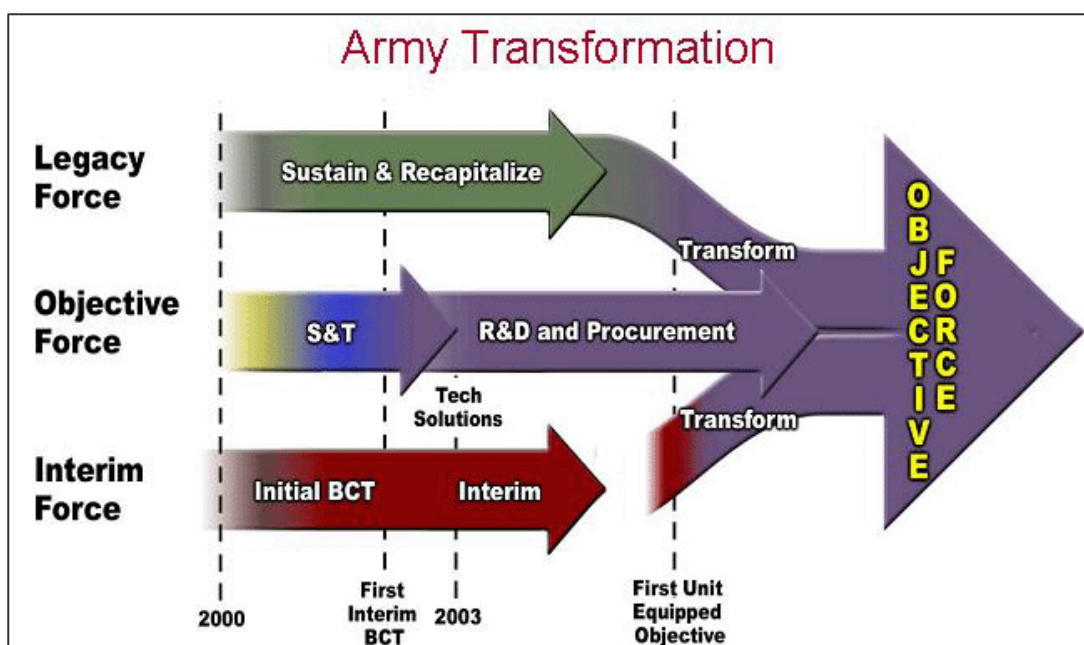


Figure 6. Transformation

theater in 30 days. The Army's challenge in the years ahead is to maintain the trained and ready force needed by the Nation, while at the same time transforming both the operational and institutional Army.

Army Transformation efforts are synchronized by the Transformation Campaign Plan (TCP), the mechanism for integrating and synchronizing the elements of the Army Vision. *Figure 6* depicts the readiness of the Legacy Force, the science and technology effort to achieve the Objective Force, and the fielding of the Interim Force. Transformation efforts integrate advancements in doctrine, leader development, organizations, materiel, and Soldier systems while also incorporating changes in deployment, installations, sustainment, and business practices.

Transformation to the Objective Force is a continuous process based on the goal of achieving the initial Objective Force capability this decade, contingent upon technology advancements, funding levels, and unit availability. The timeline in *Figure 7* depicts the planned conversion of units within the current Army to Interim and Objective Forces. The Army will begin fielding the first Objective Force unit in 2008. In 2010 the Army plans to attain an Initial Operational Capability (IOC) for the first Objective Force Brigade, or equivalent unit, and will begin the fielding of three Objective Force Brigades annually. By 2016 the Objective Force will consist of five divisions and will assume the first-to-fight mission. The Legacy Force, however, will still be needed to supplement the capabilities of the Objective Force until 2032, by which time the entire force is expected to have completed Transformation.

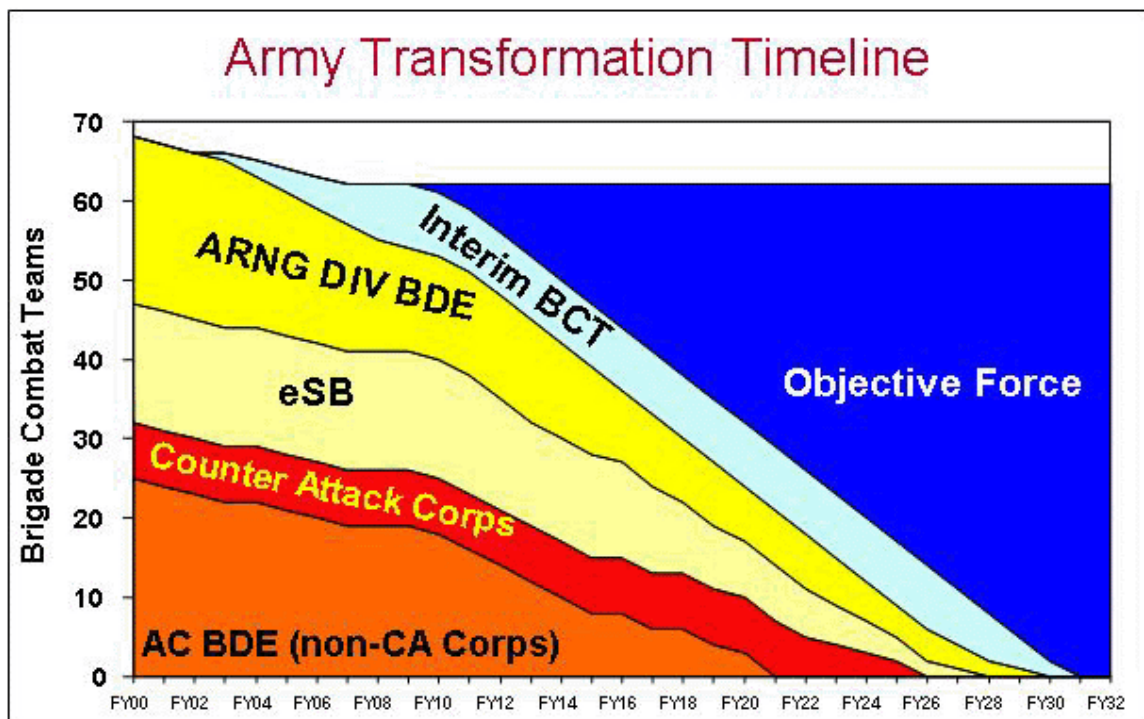


Figure 7. Transformation Timeline

Objective Force

The Objective Force is our future full spectrum force: organized, manned, equipped, and trained to be more strategically responsive, deployable, agile, versatile, lethal, survivable and sustainable across the entire spectrum of military operations from major theater wars (MTWs) through counterterrorism to homeland security. Objective Force units will conduct operational maneuver from strategic distances, and arrive at multiple points of entry, both improved and unimproved. As necessary, Objective Force units will conduct forcible entry, overwhelm aggressor anti-access capabilities, and rapidly impose our will on our opponents. In this manner,

Objective Force units arrive immediately capable of conducting simultaneous, distributed and continuous combined arms, air-ground operations, day and night in open, close, complex, and all other terrain conditions throughout the battlespace. Army units conducting joint and combined operations will *see first, understand first, act first and finish decisively* at the strategic, operational, and tactical levels of war. (Figure 8)

Army Objective Force units will dominate land operations, providing the decisive complement to air, sea and space operations. They will create synergy within the Joint Task Forces by controlling the ground, where people and political authorities reside, and by defeating our opponents in their protective sanctuaries

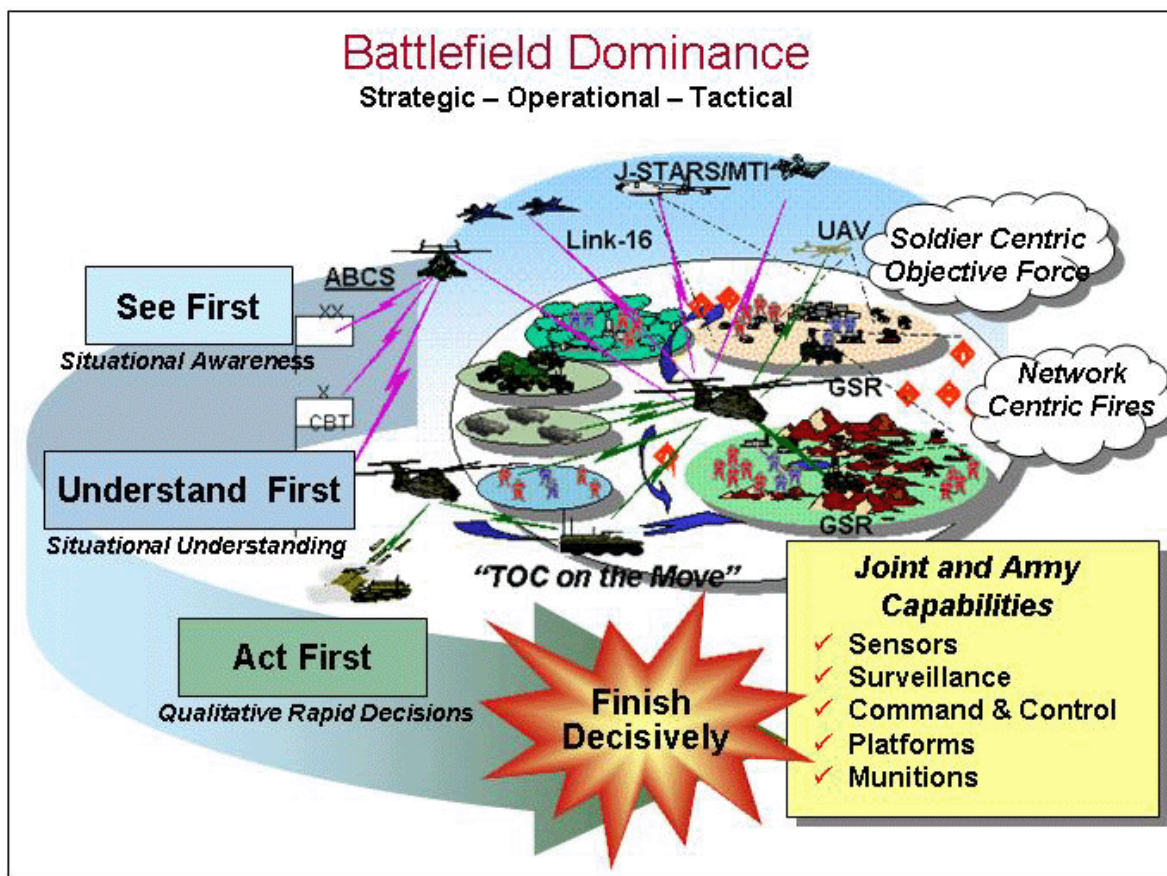


Figure 8. Battlefield Dominance

or forcing them into the open where they can be destroyed with joint fires. The psychological effects produced by the power and precision of Objective Force units will serve to deter hostile acts, both prior to deployment and during the stability phases of operations. The presence of Objective Force leaders and Soldiers, disposed across the battlespace yet operationally integrated through an information network, provides the JFC situational dominance in applying lethal and nonlethal effects with unprecedented precision across the spectrum of military operations.

Objective Force units will make significant contributions at all three levels of warfare: *strategic, operational and tactical*. At the *strategic* level, Objective Force units will continue to meet the Army's nonnegotiable contract with the American people to fight and win our Nation's wars. Objective Force units will also continue to provide the Army's unique contribution to national security: sustained land dominance across the range of military operations and spectrum of conflict. At the *operational* level, the Army provides headquarters that act as integrating agents within joint, interagency and multinational teams. Designated Objective Force headquarters and major commands will act as Joint Task Force (JTF) Headquarters, Joint Force Land Component Commands (JFLCC), and/or Army Service Component Commands (ASCC). For land campaigning, the Objective Force will provide operational level information superiority to JFCs, enabling them to gain and maintain operational initiative. Information superiority will be gained through operational level intelligence, surveillance, and reconnaissance (ISR); information

management (IM); and information operations (IO). When coupled with Objective Force land campaign planning expertise, information superiority enables JFCs to see first, understand first and act first at the operational level.

The Army's ability to dominate the *tactical level* of war—the short sword warfight—upon which operational and strategic success is built, is essential for Joint Force success on land. Recognizing what is possible at the tactical level has been the subject for years of intense Army study and wargaming and, more recently, training enhanced with networked situational awareness within Legacy and Interim Force formations. Objective Force units will be optimized to win on the offensive, to initiate combat on their terms, to gain and retain the initiative, build momentum quickly and win decisively. They will be capable of mastering the transitions in warfare - - from fort to foxhole, from offense to defense, from warfighting to support operations - - that can sap operational momentum and threaten retention of the initiative. At the tactical level, Objective Force Units will *see first, understand first, act first and finish decisively* as the means to tactical success. Operations will be characterized by developing situations out of contact; maneuvering to positions of advantage; engaging enemy forces beyond the range of their weapons; destroying them with precision fires; and, as required, by tactical assault at times and places of our choosing. Commanders will accomplish this by maneuvering dispersed tactical formations of Future Combat Systems (FCS) and Objective Force Warriors (OFW), linked by web-centric C4ISR capabilities for common situational

dominance. With these capabilities, the Objective Force will master the transitions at all levels of operations.

See First. Objective Force units will see first by detecting, identifying, and tracking the individual components of enemy units. Advanced technologies that lead to unprecedented intelligence, surveillance, and reconnaissance capabilities coupled with other ground, air, and space sensors networked into a common integrated operational picture will enable forces to see the enemy, both in whole and in part, as a complex, adaptive organization. Data fusion systems, the Joint Global Information Grid, and leader training will enable decision makers to have a synthesized, common picture of the battlefield, the common operational picture (COP). These advanced technologies will be complemented by transformed Army Special Operations Forces, which will serve the Nation as “global scouts”. These forces will provide networked feeder information to the COP regarding the geography of the battlespace, enemy and friendly forces, critical mobile and fixed targets at various ranges, in all weather and terrain.

Understand First. Using the COP, Objective Force commanders will be able to leverage the intellect, experience, and tactical intuition of leaders at multiple levels in order to identify enemy centers of gravity (COGs) and conceptualize solutions. As commanders decide on a course of action, they instantaneously disseminate their intent to all appropriate levels, affording maximum time for subordinate levels to conduct requisite troop leading procedures. The time gained through effective use of these information technologies permits

Objective Force units to seize and retain the initiative, building momentum quickly for decisive outcomes.

Act First. Seeing and understanding first gives commanders and their formations the situational dominance necessary to act first--to engage at times and places with methods of their own choosing. Objective Force platforms and systems will be capable of moving, shooting, and reengaging faster than the enemy. Target acquisition systems will see farther than the enemy in all conditions and environments. Units will be able to rapidly assess options, act first by understanding when and where they must transition between actions, and remain fully synchronized throughout execution. The design is to deny the enemy any respite or opportunity to regain the initiative while Objective Forces operate at high operational tempo inside their opponent's decision cycle. Leveraging the COP, Objective Force units rapidly learn of actions, understand the impacts, and then synchronize their own actions--self-synchronization.

Finish Decisively. Objective Force units finish decisively by destroying the enemy's ability to continue the fight and achieving dominance quickly. Objective Force units do this by building momentum and rapidly transitioning to assault and exploitation operations without allowing the enemy time or opportunity to regroup and continue the fight on its terms. Units will maneuver by both ground and air to assume tactical and operational positions of advantage through which they will continue to dominate the enemy and pursue subsequent campaign objectives. Objective Force units will continue to exploit the initiative until they have broken

the enemy psychologically and/or physically, thus achieving decisive victory.

Critical to the Objective Force's ability to "See First, Understand First, Act First and Finish Decisively" at the strategic, operational and tactical levels is a force design founded on a set of characteristics that provides the Force with the capability to be strategically responsive and dominant at every point on the spectrum of military operations.

Objective Force Characteristics

These seven characteristics of the Objective Force are complementary features that together produce an overall capability greater than the individual capabilities they describe. These characteristics arise from the Vision's goal and the likely shape of the future international security environment. In turn, they provide the analytical foundation for developing the concepts, doctrine, and systems that will constitute the Objective Force.

Responsive. Responsiveness embodies time, distance, and sustained momentum. The Objective Force must be *responsive* to allow the Army to meet frequent contingency requirements with any element of the force. To be responsive requires the ability to put forces where needed on the ground, supported by air and naval forces, to directly affect the outcome of the situation or crisis at hand within hours of a decision. The forces deployed must be prepared to accomplish their mission regardless of the environment, the nature or scope of the proposed operation, or other

commitments. They should have a demonstrated capability to deter the prudent adversary, as well as to influence and shape the outcome of the crisis. If required, they should have the ability to employ force from low to high-intensity. Responsiveness applies to more than just operational forces; the entire mobilization process must be responsive in order to ensure the availability of the entire force in a timely manner. (*Figure 9*)

Deployable. To achieve this responsiveness, Objective Force units must be *deployable*. These units must be capable of rapid strategic movement to create the opportunity to avert conflict through deterrence and confront potential adversaries before they can achieve their goals. Designing an Objective Force platform weighing less than 20 tons and capable of fitting a C-130-sized cargo envelope will facilitate the requirement to have a combat brigade on the ground within 96 hours after liftoff, a division within 120 hours, and five divisions within 30 days. Accomplishment of these aggressive deployability requirements means the Army will need support from the other Services, particularly in the availability of vital strategic lift assets such as the C-17 aircraft and fast sealift. With that support, the Army will be able to provide an unprecedented level of ground force dominance.

Agile. Because of the broad range of missions that will be assigned to U.S. forces, often in highly volatile situations, Army forces must be able to shift intensity of operations without augmentation, a break in contact, or additional training. Today's forces possess the *agility* to shift seamlessly from offensive to defensive to offensive operations on the battlefield. The Objective Force must replicate that

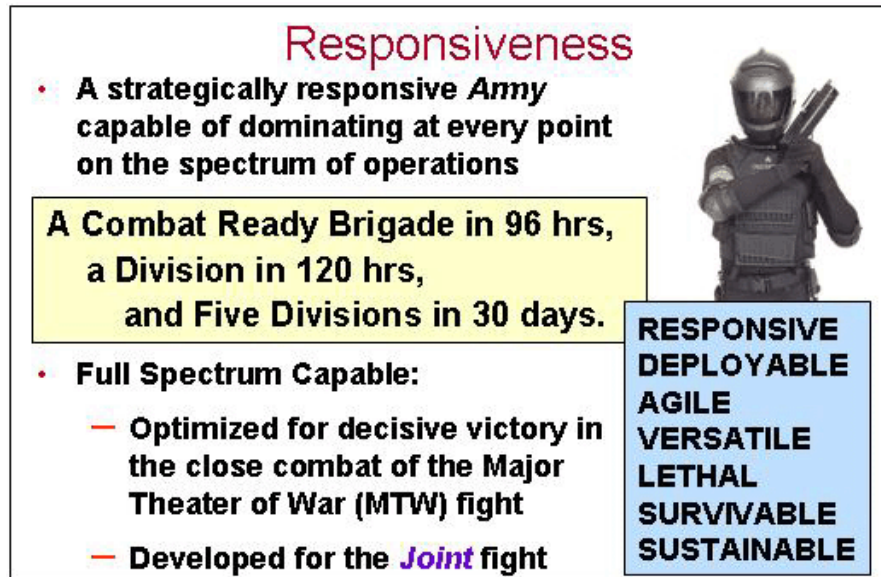


Figure 9. Responsiveness

same agility in a much broader, full spectrum context within entire theaters of operation. These forces will frequently be called upon to transition from non-combat disaster relief to low-intensity contingencies to high-intensity warfighting with little or no time to change mindset or organizational design. The agility to make these transitions without losing momentum is a function of our people. The Army will develop it through leadership and training.

Versatile. *Versatility* describes the inherent capacity of Objective Force formations to dominate at any point on the spectrum of military operations (Figure 10). The Objective Force will be designed for full spectrum success while optimized for major theater war. The force design means that formations will possess the inherent versatility to operate effectively anywhere on the spectrum of military operations without substantial augmentation to perform diverse missions within a single campaign. As technology produces the breakthroughs necessary for the Objective Force,

distinctions between heavy and light forces will blur. Special purpose capabilities previously associated with today's heavy or light formations--to include vertical maneuver capability--are designed into Objective Force formations. These units will possess the lethality, speed and staying power associated with heavy forces and the agility, deployability, versatility, and close combat capability of today's light forces. While The Army will retain certain special purpose capabilities and units, the majority of the force will be combined arms and full spectrum capable.

Lethal. Objective Force *lethality* will exceed that of today's conventional heavy forces. Through technological improvements in weaponry and munitions, the Objective Force will have the capability to destroy enemy formations at longer ranges, with smaller calibers, greater precision, and more devastating target effects. Key enablers include organic line of sight, beyond line of sight, and non-line-of-sight fires. These fires will overmatch the enemy in all conditions and environments and be

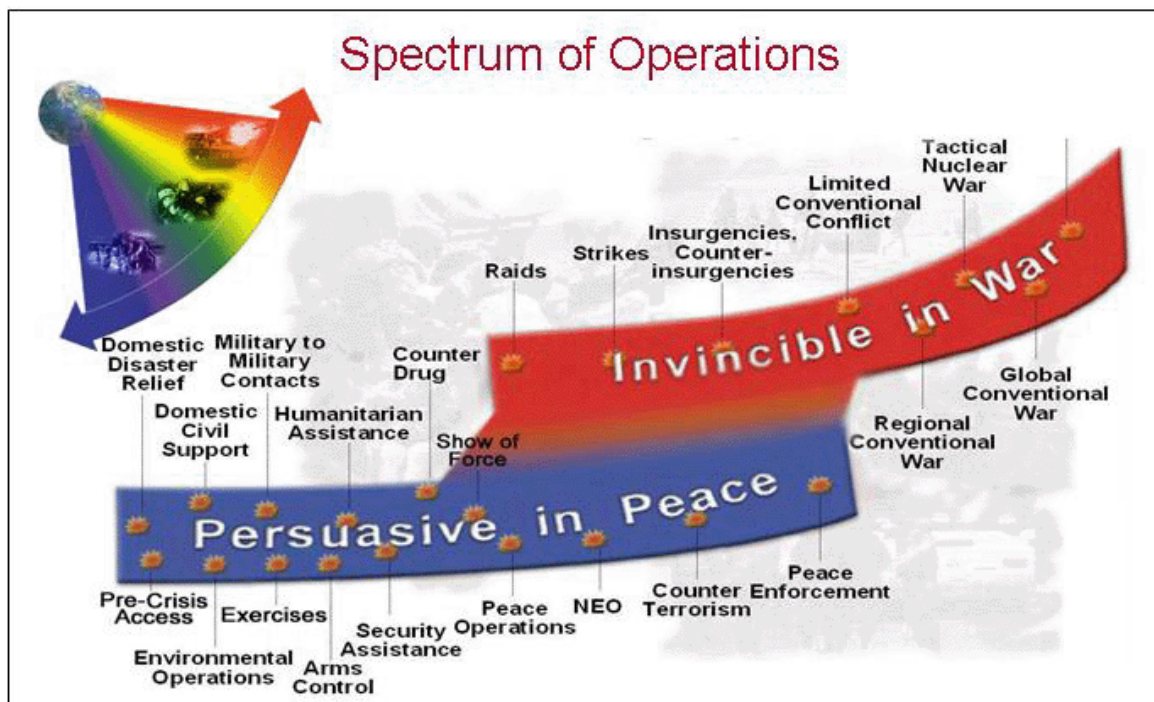


Figure 10. Operational Spectrum

based on one shot—one kill disciplines and designs. New propellants and materials will permit smaller caliber penetrators, and, together with increased accuracy, reduce ammunition weight, opening new possibilities for system as well as unit agility. Embedded intelligence will enable selective engagement of those targets whose destruction creates the greatest effects on the enemy force.

Survivable. The Objective Force will take advantage of technologies that provide maximum protection and *survivability* down to the individual Soldier level, on or off platforms (Figure 11). The agility of our formations combined with the common operating picture is critical to maximize survivability. Ground and air platforms will leverage the best combination of low observable, reduced electronic signature, ballistic protection, long-range acquisition, early discrete targeting, shoot first every time, and target destruction each time we pull a

trigger. Objective Force survivability will be linked to its inherently offensive orientation, as well as its speed and lethality. By seizing the initiative and seeing, understanding, and acting first, the Objective Force will enhance its own survivability through action and its retention of the initiative.

Sustainable. Our forces must retain the capability to continue operations longer than any adversary the Army confronts. This is a critical aspect of equipment superiority. *Sustainability* is directly linked to responsiveness and deployability. Careful planning and discipline is essential to deploy only those forces and systems needed to ensure dominance at every point on the spectrum of operations. Sustainment requirements will be reduced, where possible, by minimizing forces deployed into the area of operations through split basing and the use of technology to provide reach capability. Host nation and allied support for our forces can also reduce

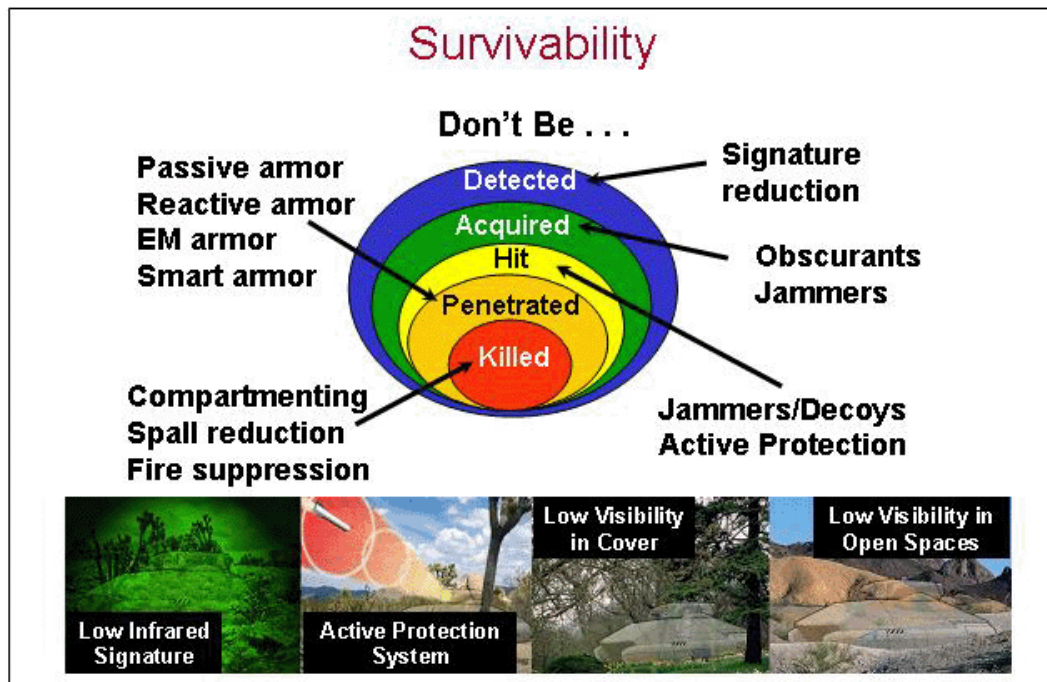


Figure 11. FCS Survivability

sustainment requirements, but the Army must be able to operate unilaterally if necessary. Consequently the Army must continue to find ways to exploit advanced technologies and reduce the logistics footprint and related costs of our support structure.

As it transforms itself into the Objective Force with the characteristics described above, the Army will remain a values-based force that derives its greatness from its people. The Army will continue to attract, train, motivate, and retain the most competent and dedicated people in the Nation to fuel our ability to be persuasive in peace and invincible in war. The Army will invest in training, educating, and equipping our Soldiers and civilians while providing them and their families with the well being necessary to make the Army a rewarding and fulfilling profession. Providing our Soldiers and leaders with a strong physical, mental, and moral foundation will enable them to act decisively while conducting full spectrum

operations in the complex environments they will surely face.

In sum, the Vision points to a synergy that will revolutionize the effectiveness of the Army in order to match its capabilities with the Nation's strategic requirements. The Army intends to reduce or even eliminate the current distinctions between the light and heavy units. Anticipated technological improvements will enable new organizational and operational concepts that optimize the employment of Army and joint capabilities across the full spectrum of operations. The versatility inherent in these organizations will be magnified through the training and leadership of our high quality men and women, who will be prepared to transition from disaster relief to low-intensity contingencies to high-intensity warfighting without pause. Applying the Objective Force design across the Army will improve our overall capability, help alleviate operational tempo (OPTEMPO) and personnel tempo (PERSTEMPO)

challenges, and enhance the Nation's capacity to sustain long-term commitments while responding to frequent contingencies.

The Interim Force

Establishing the Interim Force fills the strategic near-term capabilities gap between Army heavy and light forces. It leverages today's state of the art technologies to bridge the capabilities gap between the Legacy Force and the arrival of the Objective Force and to provide more flexible options for the regional CINCs. Interim Force units are designed to be operationally effective at both the low end of the spectrum—peacekeeping, security-building and support operations, and smaller-scale contingencies—as well as the high end of the spectrum. They will also serve as an indispensable vanguard for the future Objective Force by validating operational and organizational concepts, training and leader development initiatives, and deployment scenarios.

The IBCT is the cornerstone of the Interim Force. Two Army brigades, one heavy (3rd Brigade, 2d Infantry Division (3/2 IN)) and one light (1st Brigade, 25th Infantry Division (1/25 IN)) have been reorganized at Fort Lewis, Washington into an IBCT configuration. The Army plans to convert at least six brigade combat teams to an IBCT configuration. Extension of the Interim design from an IBCT to an Interim Division is currently being developed and modeled by the Army's Training and Doctrine Command (TRADOC). In addition the Army has recognized the requirement for a cavalry function in both the current and future operational environment. TRADOC is presently

developing the organizational design for an Interim Cavalry Regiment.

Transformation to the Interim Force is occurring now with the conversion of 3/2 IN and 1/25 IN. Interim Force units will be among the last in the Army to change to an Objective Force design.

Interim Brigade Combat Team

The Interim Force is based on the foundation of an IBCT equipped with a family of Interim Armored Vehicles (IAVs), lightweight artillery, and other available advanced technology. This technology will include Land Warrior systems that will be integrated into the IBCTs and significantly enhance the common situational awareness for Soldiers. With a total of at least six IBCTs, the Army will offer the joint and multinational force commander increased operational and tactical flexibility to execute any required fast-paced mission using units deployable in C-130 or equivalent aircraft.

The IBCT's two core qualities are increased mobility (strategic, operational, and tactical) and its ability to achieve decisive action through dismounted Infantry assault. Its core operational capabilities rest upon increased operational and tactical mobility, enhanced situational understanding, combined arms integration down to company level, and increased Infantry strengths for close combat in urban and complex terrain.

In the spring of 2000, Congress approved funding for the first two IBCTs. Congress displayed further support of the IBCT concept with an additional \$600 million for IAV procurement in the FY 2001

and effectiveness. Innovative applications and technology insertion in supporting forces will complete the IBCT package and enable initial operational capabilities for the first IBCT in early 2003.

The transformation to the IBCT design is projected to take one to two years for an active brigade, and the Army expects that the National Guard brigade will take up to five years due to the difference in tempo between the two organizations (*Figure 12*).

These interim brigades will increase the momentum of Army Transformation to the Objective Force, a force that is more strategically responsive and dominant at every point of the operational spectrum. The Army continues to refine the appropriate mix of organizations and capabilities needed in the Interim Force. This includes consideration of an Interim Cavalry Regiment that combines the



deployability of an IBCT with the operational capabilities of a traditional cavalry regiment.

The Interim Division and the Interim Cavalry Regiment

Studies suggest that IBCTs, although designed for easy integration into light or heavy divisions, are even more flexible and tailorable to the joint fight when subordinated to an Interim Division. Such a structure provides a strategically responsive force capable of initiating earlier decisive operations, coordinating multiple, simultaneous stability and support operations (SASO) and small-scale contingencies (SSC) requirements, providing the C4ISR and precision fires that enable precision maneuver and information superiority and functioning as an Army Forces (ARFOR) Headquarters in joint operations.

The Army continues to refine the Interim Division organization and operational concept while it weighs the option of converting a current Army division to the Interim design, possibly prior to 2008.

Recognizing the immediate need to provide effective command and control for an IBCT, the Army is also analyzing the establishment of a detachable, deployable cell that would provide for higher control (HICON) of an IBCT until such time that an Interim Division has attained initial operational capability. The HICON element will be a cost-effective solution designed to act as a “digital bridge” between the IBCT and the next higher-level headquarters. A properly designed and resourced HICON will allow the IBCT commander to effectively

command and control his unit while the digitally-linked HICON interfaces with the Joint Task Force or Army Force Commander (ARFOR). The Army intends to establish a HICON capability concurrently or just prior to the first IBCT's (3/2 IN) initial operational capability, currently scheduled for 2003.

As the Army continues to examine Interim Force requirements, it conducts modeling and simulation to ensure the organizational construct is sufficient to decisively defeat a robust enemy force. As part of the analytical effort, the Army has validated the need for a cavalry force. Initial insights have led the Army to refine the basic IBCT design and establish a new organizational design: the Interim Cavalry Regiment (ICR). The ICR will fulfill the emerging cavalry roles articulated in FM 3.0 *Operations*. The Army is considering converting one of the previously identified brigade combat teams to an ICR and will announce a decision in late FY02.

The current operational environment demands a decisive ground combat capability that can rapidly deploy to any global contingency and effectively operate once it arrives in theater. The Army recognized the need for this capability and has made significant progress in developing an Interim Force that fills the requirement. Today, Army Soldiers in Fort Lewis, Washington, are well on their way to providing the President and the Secretary of Defense with a new and powerful capability—the IBCT.

Legacy Force

Modernization and recapitalization of the current Army force—the Legacy Force—

is at the heart of addressing readiness. The Legacy Force continues to provide the strategic insurance policy for the Army's responsibility to fight and win decisively against any threat while the Army transforms. Army Transformation timelines clearly show elements of the Legacy Force remaining within the Army's force structure for the next 25-30 years. Within that context, the Army will continue to rely upon the Legacy Force to fight and win conflicts well into the fielding of the Objective Force, which begins in FY08. For that reason, resources must be devoted toward the recapitalization and limited modernization of the Legacy Force while the Army successfully transforms itself. The Army will direct toward the Legacy Force the amount of resources that is needed to maintain combat superiority over any potential enemy as well as the superior ability to project power rapidly at strategic depths.

The Army recognizes the reality of resource constraints and is prepared to accept risk in the current force in order to allow the investment required for the future force. This risk, however, must be continually reviewed to ensure that current readiness requirements are always met, especially in light of critical and often unexpected needs that arise, such as with the dramatic new demands following the 11 September 2001 terrorist attacks.

An important element of the Legacy Force is the requirement for an offensive or counteroffensive capability for use in a major conflict. Assembling the ground force required for decisive counteroffensive operations anywhere in the world calls for a three-division corps, with an armored cavalry regiment. To meet this need, the Army is selectively

modernizing and recapitalizing III Corps (designated as the Army's Counterattack Corps), which consists of the 3rd Armored Cavalry Regiment and three active duty heavy divisions: the 1st Cavalry Division, the 4th Infantry Division and the 3rd Infantry Division. Also included are those echelons above division (EAD) units assigned to III Corps, including Reserve Component units.

The insertion of digital technology and better capability to manage knowledge will move the modernized Legacy Force organizations toward the kind of warfighting ability to see the battlefield, anticipate requirements and handle transitions that will characterize the Objective Force. In that sense, the Army's Modernization Strategy begins to develop future leaders who can employ the Objective Force in ways that maximize its potential.

The forward-deployed and early deploying contingency forces, along with the prepositioned equipment sets that support them, will be recapitalized and selectively modernized as needed within available resources. Reserve Component forces will maintain capabilities compatible with the units that they support through the selective cascading of equipment from Active Component forces in the near-term and more extensive cascading of Legacy Force equipment in the mid to long term. The difficult decisions made to fully fund Objective and Interim Force programs, resulting in the reduction in the overall Legacy Force recapitalization and modernization effort, delay the modernization of the Reserve Component forces that rely on cascading. This delay is a necessary level of risk required to

meet the Army's Vision of a future transformed force.

Synchronizing Transformation—The Army's Transformation Campaign Plan

The Army Vision represents the goals for the Army, while the Transformation and the accompanying TCP is the vehicle for becoming more strategically responsive and dominant across the full spectrum of military operations. The TCP, which is developed, coordinated, and maintained by the Army G3, ensures the synchronization of the Transformation process with the day-to-day management of the Army. In brief, this campaign plan is the institutional synchronizer and road map for achieving the Army Vision.

Achieving the Vision requires the comprehensive transformation of the entire Army including both the Operational Force and Institutional Army. The general concept of operations mandates that the Army implement the Vision through Transformation as rapidly as possible, while continuing to sustain warfighting readiness.

The Army is pursuing an objective-oriented, condition-based strategy wherein Transformation proceeds in accordance with a series of decisions. The TCP contains three major objectives and four major decision points that guide the Army's Transformation efforts. The

major objectives are the Initial Force, the Interim Force, and the Objective Force. The four major decision points are: IAV Selection, Transition from Initial Phase to Interim Capability Phase, Extend the Interim Design Beyond Brigade Echelon, Transition the Interim Capability Phase to Objective Capability Phase.

The TCP is a three-phased plan with phases corresponding to the three major objectives. In addition, there are three axes: Trained and Ready, Transforming the Operational Force, and Transforming the Institutional Army. These serve as the framework for the execution of the TCP. These axes are further divided into Lines of Operation, which provide the ability to synchronize and integrate the transformation effort across the Army. (Figure 13)

Annex B to the TCP is the Synchronization Matrix, a software tool for synchronizing the transformation activities of the Army. It contains the objectives, decisions points, milestones and events. The key institutional processes inside and outside the Army are included in the Synchronization Matrix. These processes are displayed as key input/output events distributed over time. The Army Transformation Office within the Army G3 maintains the Synchronization Matrix. The staff proponent for each of the Lines of Operation is responsible for updating the data in the Synchronization Matrix.



Figure 13. TCP

Exercises and Experimentation

The Army's experimentation and its participation in Joint Concept Development and Experimentation (JCD&E) will play a key role to shape Transformation and demonstrate capabilities. Joint and Service experimentation is a focus of DoD planning guidance, and the Joint Forces Command (JFCOM) is the executive agent for joint experimentation.

JFCOM experiments with future joint concepts that the Services will explore over a six-year period and sets the conditions for the Services' participation in joint experiments. Consequently, JFCOM reports the results of the concept

experimentation to the Secretary of Defense and Congress. The TCP is the primary tool to manage the Army's contributions to joint experimentation.

Force XXI experimentation on the Legacy Force culminated with the Division Capstone Exercise (DCX). The purpose of the DCX was three-fold: to demonstrate the "go to war capability" of the 4th Infantry Division (Mech) in 2001, demonstrate the relevance of heavy forces in the National Military Strategy, and demonstrate C4ISR functionality in a realistic environment. The DCX was conducted in two phases. DCX Phase I was conducted in April 2001 at the National Training Center (NTC) to demonstrate and assess the 4th ID's Force XXI Heavy and Aviation Brigades' ability to contribute decisively to III Corps'

land campaign counteroffensive capability. DCX Phase II was conducted in October 2001 at Fort Hood and central Texas to demonstrate 4th ID's warfighting capabilities enabled by modern warfighting doctrine, structure and systems as the decisive element of a Corps counteroffensive in a joint campaign. Results from the DCX will support modernization and recapitalization of the Legacy Force, lead to improved capabilities for the Interim Force, and provide insights for Objective Force development. (Figure 14)

While the Interim Force, including the IBCTs at Fort Lewis, is not an Experimental Force (EXFOR), both the Secretary of the Army and Chief of Staff have stated that Interim Force elements may be made available for Army and joint experiments. Interim Force elements can provide a "bridge" to Objective Force capabilities that will eventually be portrayed in Army and joint experiments during the Transformation process.

Millennium Challenge 2002 (MC02) is a Congressionally-directed Joint Experiment that will be held 24 July through 16 August 2002. It will involve live and simulated capabilities at various sites in CONUS to explore critical warfighting challenges at the operational level that will confront the U.S. military forces this decade. The purpose of the Army experiment supporting MC02, called Army Transformation Experiment 2002 (ATEX 02), is to assess the following hypothesis: "If land component and joint force commanders are provided a transforming Army force (consisting of Legacy and Interim Forces) that employs advanced enablers across the DTLOMS, then they will have enhanced capabilities to dominate and force early termination through rapid decisive operations with full spectrum dominance."

The Concept Experimentation Program (CEP) is a TRADOC sponsored activity designed to provide analytical evidence refining emerging concepts and requirements. Experimentation is



Figure 14. DCX

conducted on specific topics and focused on Army priorities in support of Objective Force development. CEP experimentation in FY02 and FY03 is designed to underpin specific requirements for the FCS. Each CEP is assigned a lead Army Battle Lab responsible for the overall effort, but supported by other Battle Labs as necessary to ensure a total Army focus. The FY02 CEP experiments are; the Unit of Action CEP (Mounted Maneuver Battle Lab lead), Shaping the Battlespace CEP (Depth and Simultaneous Attack Battle Lab lead), Objective Force Sustainment CEP (Combat Service Support Battle Lab lead), Commander's Information Cell CEP (Battle Command Battle Lab [Leavenworth] lead), and the Unit of Action Intelligence, Surveillance and Reconnaissance CEP (Battle Command Battle Lab [Huachuca] lead).

The Army's experimentation strategy will lead to a program that is designed to integrate Objective Force development across the DTLOMS in a joint context. The program will consist of a series of Army experiments and participation in major joint experiments, gradually increasing in scale, to support development of DTLOMS products for Objective Force Unit of Action, Unit of Employment, plus integration of Objective Force capabilities into the JCD&E process. The program also includes Capstone Exercises as required to demonstrate significant increases in warfighting capability. Experimentation remains a key-supporting element of Army Transformation by acting as an integrating mechanism to enable Objective Force development as part of the joint force.

Army Modernization

Modernization is a continuous process of integrating new doctrine, training, organizations, and equipment to develop and field the capabilities the Army needs to fulfill its responsibilities in executing the National Military Strategy and all assigned missions. Modernization activities are facilitated and optimized by sound Modernization and Investment Strategies that are specifically designed to implement the Army's Transformation process. The Modernization and Investment Strategies also establish common terms of reference for all modernization activities, and, very importantly, provide clear priorities and focus for the allocation of resources for equipment expenditures.

The overall Army Modernization Strategy remains focused directly on support to Transformation to ensure that those capabilities essential for the future are being developed. Simultaneously, it provides those necessary capabilities for the current force, which remains the foundation of the Army's readiness to fight and win decisively against any threat for the next fifteen or more years.

The Investment Strategy in support of modernization describes the process used in deciding how to allocate monies across competing priorities in order to obtain the best capability for each dollar spent.

Modernization Strategy— Balanced Modernization

In support of the overall goal of implementing Transformation of the Army into a more responsive and capable force for the future, the Army has developed a coordinated and comprehensive strategy of focusing all its efforts and programs on equipping and organizing forces. This strategy can be described best as one of “balanced modernization”, which seeks to develop and field combat-capable units through an appropriate mix of selective procurement and fielding of new equipment (modernization), rebuilding and upgrading of key existing equipment (recapitalization), and preserving needed elements of current equipment (maintenance). As instruments for the most efficient use of these various means, the Army also has two important processes—Unit Set Fielding and

Software Blocking—which are designed to ensure achievement of the greatest combat capability across the force throughout the overall modernization process.

The Modernization Strategy also consists of the following three components, which help define a clearer focus for its implementation (*Figure 15*):

- S&T efforts to enable timely fielding of the future Objective Force, and, in particular, the FCS, which will be the foundation of that force.
- Fielding of immediate operational capabilities in a more responsive yet still lethal force by organizing and equipping brigade-sized units outfitted with a series of new interim combat vehicles.
- Maintaining and improving essential

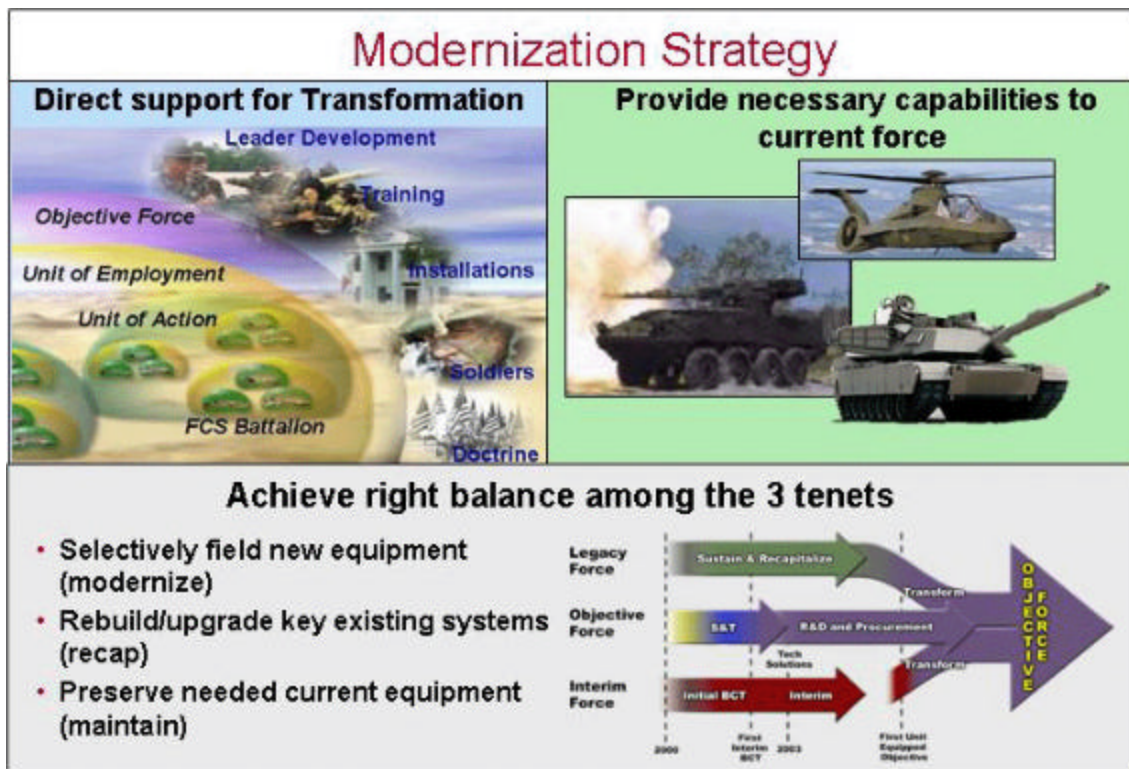


Figure 15. Modernization Strategy

warfighting capabilities of the existing forces needed to preserve appropriate military superiority for all possible missions.

Ultimately, the Army will have a common organizational design for all of the Components—Active, Guard, and Reserve—built around a new generation of systems that are deployable on C-130-like aircraft, though with optimum deployment on C-17 aircraft and fast sealift. The desired end state is a more strategically responsive Army that is more capable of dominance along the full spectrum of military operations in a joint and combined environment.

Balancing Modernization across DTLOMS

Army Transformation mandates a comprehensive examination of the interrelationships between doctrine, training, leader and Soldier development, materiel, organizations, and facilities. As the Army fields new capabilities to the Legacy Force, begins the fielding of the Interim Force and develops the Objective Force, it must optimize investments by ensuring the proper synchronization between DTLOMS requirements and DTLOMS solutions.

Today, the Army has in place at Fort Lewis a special team of personnel who are crafting the doctrine, tactics, techniques and procedures for the IBCTs. Concurrently, it is examining organizational designs and developing a new how-to-fight doctrine for an Objective Force designed to See First, Understand First, Act First and Finish Decisively.

The Army's Training and Doctrine Command, conducting a comprehensive review of Army training, is currently formulating a new Training and Leader Development Model that is based on Army Culture: established standards for Soldiers, leaders and units; feedback at all levels from the individual Soldier to Department of the Army Headquarters; and a balanced operational and educational experience through the proper rotation and sequencing of assignments, schooling, and self-development.

Transformation has placed new demands on the Army's management of Soldiers and leaders throughout the force. With over one million Soldiers geographically dispersed across seven continents, the Army's personnel community is developing new tools that will ensure the right Soldiers with the right skill sets are assigned to the proper units in a timely manner to ensure combat readiness. Enhanced personnel databases, leveraging web-based technologies, and implementing best business practices are examples of how the Army intends to improve the management of its military and civilian personnel.

The ultimate goal of our modernization effort is to produce highly capable organizations with technologically superior equipment, manned by well trained personnel, led by leaders who are fully aware of and able to employ their organizations' potential in accordance with a solid doctrinal foundation. Modernizing the Army with new systems and equipment is a critical undertaking that consumes vital and limited resources. Only by ensuring that equipment fielding is coordinated and synchronized with total

requirements can the Army be assured that resources are being used in a wise and cost-effective manner. The annexes attached to the 2002 Army Modernization Plan provide a comprehensive and succinct review of the progress being made modernizing across DTLOMS as the Army transforms itself to the Objective Force.

Modernization Priorities

To implement the Modernization Strategy in support of Transformation, the Army prioritizes its investment of limited resources over time. The number one priority for Army modernization investments is the development of the future Objective Force and particularly the FCS, the foundation of the future transformed Army. Initially that investment takes the form of S&T efforts to explore, identify, and develop the revolutionary technologies needed to make the FCS a reality. Of the Army's total S&T funding, over 95% directly supports programs needed to develop Objective Force technologies. In addition to these S&T efforts, the Army is also devoting a substantial and increasing amount of its RDA funding to fielding systems that will be fully integrated in the Objective Force.

Developing and fielding the future Objective Force is the Army's modernization investment priority, and 70% of RDA funding in the FY03-07 Plan supports this purpose. Fully 20% of RDA is directly earmarked for systems that will

be integral to the Objective Force. Over 50% of total RDA is earmarked for Legacy Force systems that will transition to and remain part of the Objective Force, and only 16% of RDA funding will be used by systems associated solely with the current Legacy Force. The preponderance of funding focused on the Objective Force will continue to increase over time as the Army progresses in the Transformation process.

The focus on the future force is, in fact, enabled by the Army's continued investment in the readiness and capability of the Legacy Force and in the fielding of the smaller Interim Force, for which about 4% of RDA funding is devoted. As the Objective Force units are fielded and become operationally capable, beginning in 2010, the change in investments will accentuate even further. In recent years the Army has begun a paradigm shift in its investments toward an increasing emphasis on leap-ahead technologies needed for the future. This shift will continue in the coming years, though the Army will still have to balance sufficient investments in near-term capabilities until future formations and systems can be fielded. (*Figure 16*)

In order to accelerate Transformation to the future Objective Force, the Army has accepted risk by focusing its modernization efforts on selected units and capabilities.

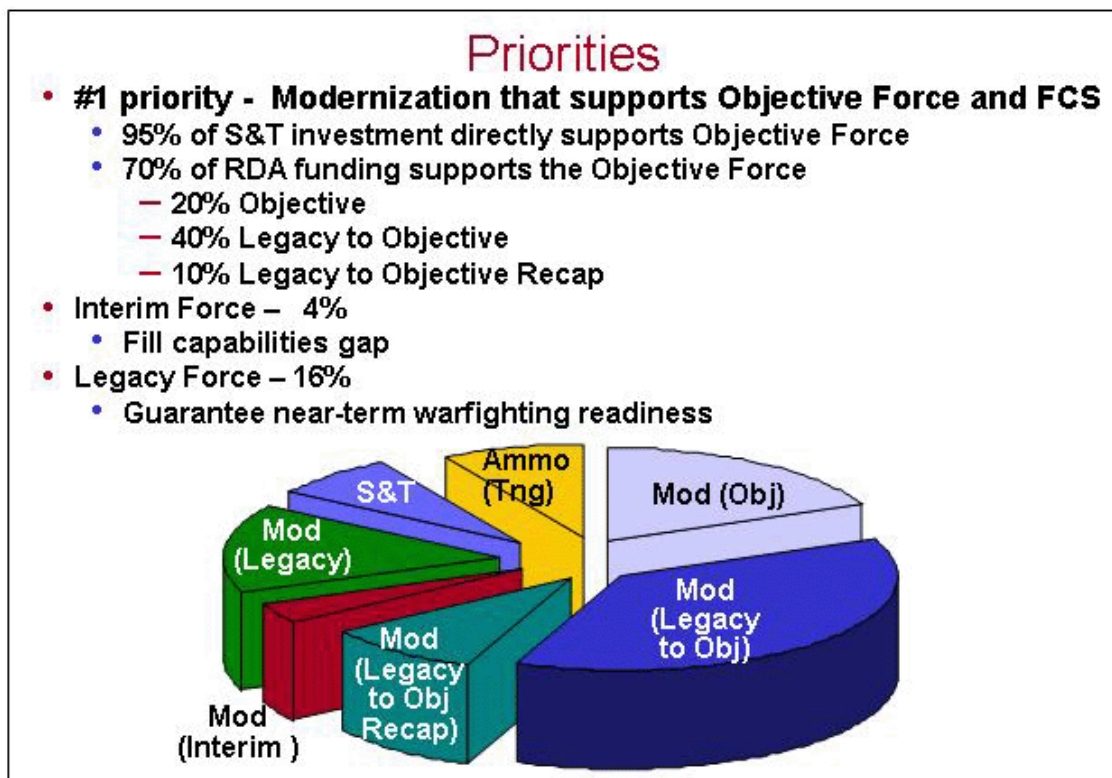


Figure 16. Modernization Priorities

Modernization Processes

Equipping Categories

Programs are placed into three basic categories as follows:

Modernization: The development and/or procurement of new systems with improved warfighting capabilities.

Recapitalization: The rebuild and selected upgrade of currently fielded systems to ensure operational readiness and a near zero time/zero mile system.

Maintain: Repair or replacement of end items, parts, assemblies, and subassemblies that wear or break.

As already mentioned, there are two important processes that are integral to the execution of the Army's Modernization Strategy—Unit Set Fielding and Software Blocking. In addition to these processes, the Army also makes extensive use of simulation and modeling as well as of studies and analyses in order to help establish priorities and make informed choices throughout the Transformation process. Collectively, all of these processes and supporting tools are integral to the success of Transformation and an effective and efficient Modernization Strategy. (Figure 17)

Unit Set Fielding (USF) is a disciplined modernization process and strategy that results in fielding of an increased capability/function in support of the three

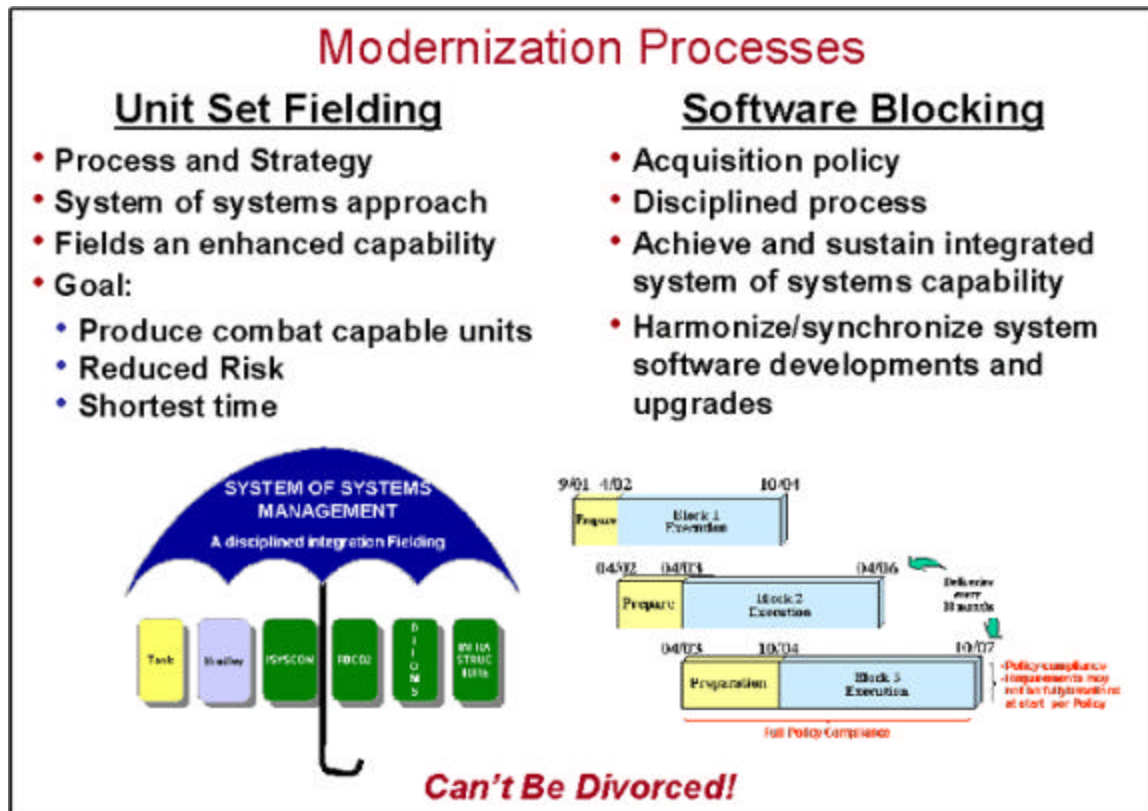


Figure 17. Processes

paths (Legacy, Interim and Objective) of Army Transformation. The USF process drives the integration and synchronization of multiple systems fieldings occurring during a defined fielding window to minimize the impact on force readiness; increase force effectiveness and streamline the fielding process. The fielding schedules to execute USF are focused on system interdependencies and operational and readiness impacts because readiness is the driver.

Current and future war fighting systems are interdependent and require interconnectivity to maximize their effectiveness on the battlefield. Therefore, to ensure efficient and effective fielding, the Army instituted USF as the process to assemble and issue individual and interdependent systems. However, this process may not be

practical for all units and Components in brigade sets, particularly in the Reserve Components. Therefore, USF may be executed at battalion, separate company or team/detachment. As the result of USF, the Army ensures that the unit receives not just individual pieces of new equipment, but an enhanced war fighting capability.

Synchronizing equipment and software fielding by unit set increases efficiency and minimizes the disruption to the unit, as compared to the traditional method of unsynchronized fielding of individual systems. The traditional fielding system proved too disruptive to unit training and readiness as the Army transitioned to the digitized force. With the increased number of digitized and modernized systems being fielded, along with the accompanying successive software

upgrades, USF ensures these digitized systems, inherently designed to be used in a system-of-systems environment, create the intended synergistic effect. USF will produce combat units with far greater capabilities in the shortest period of time with minimum risk to operational availability. USF is currently being executed in support of 1st Cavalry Division (Legacy Force) and 1st Brigade, 25th Infantry Division (Interim Force).

For a unit to realize the full capability of new weapons, sensors, digital command and control systems, and corresponding training aids, devices, simulators and simulations (TADSS), equipment must be integrated, fielded, and upgraded as a unit set. The facilities to operate, maintain, and train the equipment must also be in place when the set is delivered to the unit. The Army, therefore, has a plan that packages together these required items and identifies windows for fielding them by unit sets.

Software Blocking (SWB) is an acquisition policy and disciplined process through which the Army achieves and sustains an integrated systems-of-systems (SoS) warfighting capability. SWB is a critical enabler of Unit Set Fielding.

Software Blocking as an acquisition process improvement is consistent with Clinger-Cohen and DoD 5000. The framework embodied in the SWB policy harmonizes and synchronizes system software developments and upgrades. It is designed to focus the acquisition process on a disciplined approach for achieving interoperability, commonality, and synergistic functionality. In conjunction

with USF, SWB is a conduit for executing Army Transformation.

Under SWB, the Army is making a commitment to divest itself of its traditional systems-centric approach to embrace a SoS capability that supports each element of DTLOMS. This will allow the Army to make smart decisions based on the impact to warfighting capability vice systems. Under the policy, systems include new/upgraded core battlefield systems, trainers, stimulators, test & instrumentation, and simulators needed to achieve an integrated capability across all elements of DTLOMS. Software blocking applies to all Army systems except those business systems that do not exchange information with tactical C4ISR systems and weapons systems.

SWB represents a necessary evolution along the path of acquisition reform. SWB lowers the artificial barrier between elements within the acquisition process that inhibit our ability to develop, test, train, and sustain a synergistic warfighting capability. Through SWB the acquisition process focuses on a total warfighting capability rather than individual systems.

SWB is an Objective Force process that is being implemented to enhance Legacy and Interim Force operational capability. What this means is that it will take a few iterations before SWB is fully matured. Thus, SWB provides the paradigm through which Legacy systems will transition from their stovepipe implementations in support of Joint Venture 2020 objectives.

Joint Venture 2020 requires the insertion of innovations in information technology. SWB provides the vehicle for tuning the

Army's acquisition efforts towards developing the interdependent application necessary to achieve the SoS warfighting capability essential to Dominant Maneuver, Precision Engagement, Focused Logistics, and Full Dimensional Protection. SWB ensures that the critical C4ISR, weapons systems, and SoS network infrastructure is matured in a manner that enhances overall operational warfighting capability while at the same time maximizing the operational effectiveness of individual systems. In a resourced constrained environment, priorities are targeted at maximizing total capability. For SWB, this will require a sustainment of resources from requirements through fielding.

Army Modeling and Simulation

To obtain the Objective Force as rapidly as possible, the Army will maximize use of the Simulation and Modeling for Acquisition, Requirements and Training (SMART) Initiative. SMART capitalizes on modeling and simulation (M&S) tools and technologies to address system development, operational readiness, and life-cycle cost and is accomplished through the collaborative efforts of the requirements, training and operations, and acquisition communities.

SMART is a framework to provide a disciplined, collaborative environment to reduce costs and time required to provide solutions to Army needs. Key components are the ability to exchange data, algorithms, software, and other information. SMART yields four significant benefits that are of paramount importance to Army Transformation:

1. Reduced total ownership costs and sustainment burden for fielded systems throughout their service life;
2. Reduced time to explore concepts and develop and field new or upgraded systems;
3. Increased military worth of fielded systems while simultaneously optimizing force structure, doctrine, tactics, techniques, and procedures; and
4. Concurrent fielding of systems with their training devices.

In the near term, the Army will invest in training the Army workforce to implement the SMART Initiative as soon as possible. Training will include distributed learning as well as on-site training. The benefit to the Army workforce is clear and unambiguous guidance to ensure maximum collaboration in using models and simulations, a better understanding of requirements, and reduced time to structure contracts using digital data descriptions and virtual prototypes that will shorten procurement lead times and reduce cost of system procurement. All this leads to the acquisition of better weapons systems at a fraction of the time.

The Army will use the SMART Initiative to understand current and emerging operational environments and to better understand required capabilities. Emerging and future concepts will employ technologies, unit constructs, tactics, and procedures unlike those of today's Army. Because these concepts and system designs are not fully mature, the Army must obtain modeling and simulation

tools to develop and analyze these concepts so developers and engineers can refine concepts and designs at a much faster pace, with more iterations, instead of having to build prototypes, experiment in the real world, redesign, build more prototypes, etc. Having all stakeholders involved in this process that uses modeling and simulation in a collaborative environment increases the efficiency and effectiveness of the analyses.

The Army will focus M&S investment efforts on capabilities to represent present and proposed technology, equipment, concepts, and doctrine of friendly, neutral and threat elements in the following subject areas:

- C4I and Information Fusion
- Fighting in Complex and Urban Terrain
- Homeland Security (HLS)
- Weapons of Mass Destruction (WMD)
- Small Scale Contingencies (SSC)
- Information Operations (IO)
- Modeling the Military Decision Making Process (MDMP)
- Space Operations

The Army will invest in upgrades to cost models that will be used to predict accurate life cycle costs. The new models will be based on the latest commercial product equivalents and will be used to estimate costs for emerging and state of the art technologies. These efforts will produce a standard system of on-demand, near-real-time cost estimating capabilities for the Army

acquisition community. These models, using the broadest range of acquisition tools, will allow rapid cost as an independent variable analyses and design trade-offs early in the design of a system and thus allow for reduction in the total ownership cost. Linking the new cost model to engineering models will enable cost estimators to use an iterative process to see in real time how changes in design affect the system life cycle cost.

The Army will invest in Simulation to C4I Interoperability (SIMCI) to improve interoperability (horizontally and vertically) between model and simulation and C4I systems while reducing the cost and burden associated with the production and maintenance of traditional interfaces. Development and distribution of SIMCI solutions for design and utilization of common components for the Army Battle Command System (ABCS) is essential for Army Transformation. In a similar vein, the Army is in the process of developing a roadmap that will lead to better representation of space capabilities in Army models and simulations, enabling the utility of those capabilities to be assessed in a proper operational context.

The extensive use of simulations, simulators, and simulation-based C4I systems will be required to meet the Army Transformation requirements. Future systems, including FCS, will also depend on simulations and simulators to develop doctrine, conduct training, develop and analyze courses of action, and conduct combat mission planning and rehearsal. The digital, three-dimensional picture of the battlefield provided by simulations and C4I systems will be possible, however, only if the system is built on an accurate digital environmental database.

Army investment in the Environmental Database Integrated Product Team (EDB IPT) will result in the implementation of environmental database development standards. Implementation of these standards will reduce the cost and increase the reuse of environmental databases to support a wide variety of war fighter applications.

The goal of the Army's investments in modeling and simulation is to reduce risk and identify, support, and transition M&S leap-ahead and high payoff opportunities. The return to the Army for immediate investments in these activities will be realized well before the Army fields the Objective Force.

Studies and Analysis

As the Army transforms to an Objective Force, it is faced with numerous challenges. Selection of equipment and organizational design requires decisions that chose among competing alternatives and requires a selection process that is aided and informed by rigorous analysis. The Army's analytical efforts over the next several years will focus on building and maintaining multifunctional, combat-capable units. Proper analysis will allow the Army to design organizations that are full spectrum capable in the joint warfight and are capable of achieving decisive victory at minimal risk to Soldiers and their equipment. Army analytical efforts will provide significant assistance in the materiel development and selection process by balancing risk between schedule, performance, and affordability. These analytical efforts will also identify any specific modernization and recapitalization initiatives required to sustain Legacy Force superiority with

acceptable risk while the Army focuses resources on enabling the Objective Force.

Today, the sunk costs associated with developing systems are greater than ever. The Army has invested heavily in robust and modernized materiel development and force development infrastructure and has, at any given time, tens of billions of dollars invested in its modernization plan. As we further delay decisions that cancel system development, two forces come to bear on the decision-making process: awareness of the tremendous investment to date (sunk cost), and the further delay in fulfilling the original requirement. Both of these forces work to make smart decisions more difficult and tend to further delay (and increase costs associated with) termination.

Protecting these substantial Army investments requires the Army obtain more information earlier and with greater fidelity. Robust analyses and studies support better decision-making and improve our understanding of requirements, expand technology trade space, and enhance system integration within a system of systems framework.

Army Transformation is a tremendously complex and expensive undertaking. In order to ensure against the costly cancellation and termination of programs, and ensure we balance dollars, technology, and warfighting needs, the Army requires a robust analysis capability that supports the development of a balanced and effective modernization program for the Legacy, Interim, and Objective Forces.

Below is a sample of some of the analyses the Army conducts in support of its modernization program: Warfighting Alternative Analysis Requirements & Resources (WA2R2), Continuous Early Validation (CEaVa), and Value Added Analysis (VAA).

Warfighting Alternative Analysis Requirements and Resources (WA2R2).

The Army requires analysis to review warfighting requirements for the Army during Transformation with a view towards the potential impacts on required capabilities and resource reallocation to support Transformation initiatives. WA2R2 provides an updated assessment of the Army's warfighting requirements, integrated capabilities and value-added in the future. The analysis provides insights and an analytical underpinning for building systems and munitions requirements into future programmatic reviews and defending Army requirements.

Continuous Early Validation (CEaVa).

Continuous Early Validation (CEaVa) is a decision support system that will aid decision makers and analysts in evaluating acquisition programs. CEaVa will stabilize the problem statement by validating key performance parameters or critical requirements relative to the ever-changing environment. CEaVa makes it clear that the user and developer are solving the right problem. Additionally, it increases the likelihood of producing the correct system.

Value Added Analysis (VAA).

VAA provides decision makers an analytical approach for the evaluation and prioritization of competing alternatives to support the development of a balanced

and effective Army RDA program. The study purpose is to identify and analyze marginal costs and benefits of weapon systems and develop feasible, affordable modernization investment strategies in support of the Army program planning. The objectives are to produce investment strategies for major weapon systems that maximize force effectiveness subject to constraints on budget, force structure, and production capabilities and to develop a quick reaction analysis tool to address modernization questions during program execution.

Investment Strategy--Purpose and Priorities

The ultimate purpose and goal of Army modernization is to build and maintain multifunctional, combat-capable units using a Unit Set Fielding approach. The nature of the planning, programming, and budgeting system requires that combat unit components be managed as single entities. It is the whole unit, however, that remains the primary focus. The objective is to achieve an operational capability that satisfies mission needs. The challenge inherent in building combat-capable units through the application of integrated components and the necessary associated functions is the achievement of synergism and complementary results in the units.

In the Army's investment program for PB03, the overriding requirement is to maintain current warfighting readiness. This imperative is the foundation of the Army's commitment to the Nation, and it is likewise the essential enabler for being able to transform to a future force that is better able to meet future strategic requirements.

Second to the imperative of maintaining readiness, the Army in PB03 seeks to maintain and improve the well-being of its people. This is not a luxury, but rather is vital to the Army's overarching capabilities and ability to conduct all assigned missions.

Next, as part of its PB03 program, the Army seeks to accelerate Army Transformation and move towards the future force that is the ultimate objective in the Army's Vision. It is within the context of this effort that the Army's Modernization Strategy of Balanced Modernization guides investment decisions and relative priorities. With the greatest emphasis on the achievement of the future Objective Force and fulfilling more immediate shortfalls with the Interim Force, coupled with the indispensable imperative of current readiness, the Army has chosen to continue taking risk in the modernization of its Legacy Force and the associated mid-term warfighting readiness. This risk takes the form of

more selective modernization and recapitalization efforts for the Legacy Force, though still retaining sufficient efforts to ensure essential readiness requirements. (Figure 18)

Another area of priority for the Army in PB03 relates to programs supporting anti-terrorism and force protection. Increased requirements following the September attacks have necessitated program adjustments, though for many of these the Army will seek additional assistance in order to fully support the additional requirements.

Objective Force

The Objective Force is the Army's ultimate Transformation goal. It is a future force that achieves the characteristics described in the Army Vision. The Objective Force will be a more strategically responsive Army capable of dominating at every point on the spectrum of operations and will be capable of rapid transition across mission requirements

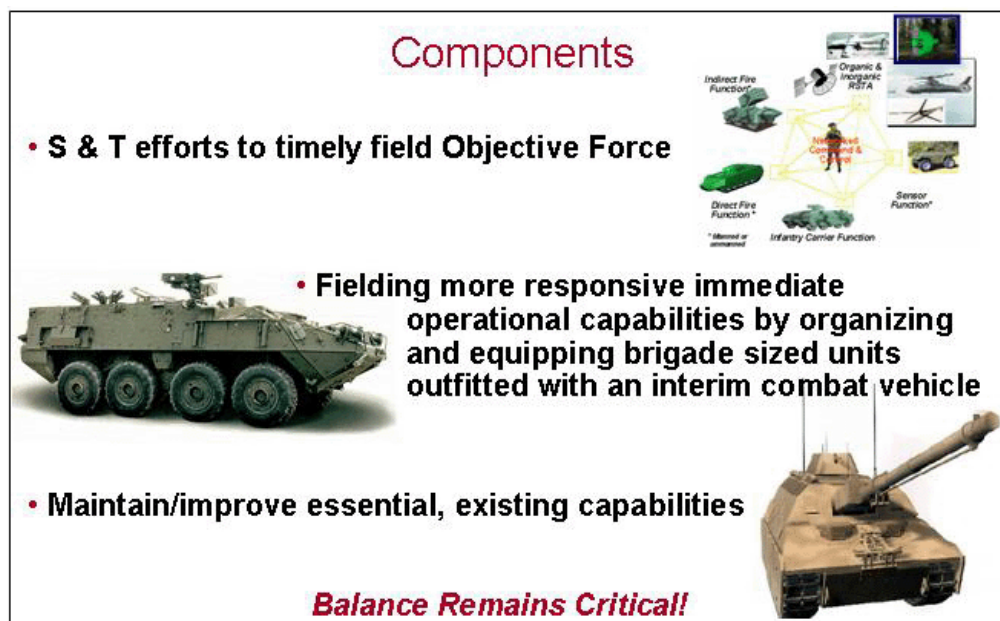


Figure 18. Investment Strategy

without loss of momentum. The Objective Force will be equipped with significantly advanced systems centered on the FCS, the Comanche helicopter, and the Objective Warrior systems. It will be commander-and-execution centric—networked internally and externally through a mobile, adaptive, reliable, command and control capability (implemented by the fielding of key enabling systems such as the Warfighter Information Network-Tactical (WIN-T)). It will leverage joint and interagency reach-back and direct downlink capabilities for intelligence, force planning, administration, technical engineering, information operations and logistical support. (Figure 19)

S&T Efforts

Army S&T is responding boldly to the challenges of the Army Vision. The S&T program consists of a dynamic portfolio

of technology investments that is responsive to warfighter needs today and in to the future. S&T seeks technological solutions that can be *demonstrated* in the near term, explores the *feasibility* of new concepts for the mid term, and seeks the *imaginable* for an uncertain far-term future.

FCS is the main thrust of the S&T program, and represents over one-third of all S&T programs. The balance of S&T is targeted to pursuing technologies that support the Objective Force as a whole. These technologies are described below:

- Future Combat Systems—The marquee S&T initiative enabling the Objective Forces is the FCS program. The FCS will be an ensemble of fighting capabilities that meet the weight and volume constraints necessary for C-130 type transport, consisting of land combat platforms tailored to address the ground combat



Figure 19. Objective Force

and mobility requirements reflected in the Army Vision. Representative enabling technologies include robotics—unmanned ground and air vehicles—enhanced mobility with electric drives, pulsed power generation, hybrid propulsion, fuel cells, low-power demand electronics and efficient power management.

- **Objective Force Warrior (OFW)**—The premiere Soldier S&T program will employ open system architectures and high-risk/high payoff technologies to yield an ultra-lightweight, stealthy combat suit; integrated, network-centric communications/sensor/power suite to permit dismounted Soldiers to net and mass fires and generally access the power of the Objective Force; integrated, lightweight sensor/weapons capability with advanced accuracy and lethality in complex terrains and urban environments. The goal is to achieve leap-ahead advances in the areas of survivability, Soldier lethality, and agility to operate for extended periods under arduous conditions, with minimal loss in physical capabilities from fatigue, stress, and hardship. OFW will be an intrinsic, basic dismounted asset within the Future Combat System of Systems architecture and fit within the overall concept of the Objective Force.
- **C4ISR**—Research and technology to enable comprehensive situational awareness for the Objective Force. This includes advanced sensors and sensor processing, intelligence and electronic warfare systems and techniques, militarized and special-purpose electronics, countermine technologies and C4 system

technologies. Keys to this are on-the-move distributed command and control, multifunction sensors and sensor fusion algorithms, and development of a seamless tactical Internet within and between units.

- **Basic Research**—Investments in the exploration of fundamental phenomena that have significant potential to enhance future land warfare capabilities in areas such as armor materials by design, nanoscience, biometrics, compact power, smart structures, miniature and multifunctional sensors and Soldier performance.
- **Medical**—Research and technology to protect and treat warfighters to ensure worldwide deployability, increase warfighter availability, and reduce casualties and loss of life.
- **Lethality**—Technologies to enhance the light forces, such as the Line-of-Sight Antitank (LOSAT) System and the Precision Guided Mortar Munitions; and technologies to provide lethality options for the Objective Force, such as the electromagnetic gun and tactical high-energy laser.
- **Rotorcraft**—Research and technology to enhance the performance and effectiveness of future rotorcraft, including rotors and structures, propulsion and drive systems, avionics and weapons, and human-systems integration (e.g., crew station) technologies.
- **Future Warrior**—Technologies to support the future infantry Soldier, including enhanced ballistic protection, clothing and equipment,

dismounted warrior C4, compact power and power management, sustenance and nutritional enhancements, Soldier weapons, and warrior technology integration.

- **Logistics Reduction**—Technologies to enhance deployability and reduce logistics demand, especially the demand on strategic lift. Examples include precision roll-on/roll-off air delivery, technologies for airfields and pavements to support force projection, 21st Century truck, and robotics to support resupply and reduce demand for food, fuel, and water.
- **Personnel Technologies**—Advanced training tools and methods to enhance warfighter and commander abilities and performance, advanced human engineering concepts to avoid information overload and optimize task allocation to enhance warfighting effectiveness.
- **Survivability**—Technologies that enable organizations, platforms, and Soldiers to avoid detection, acquisition, hit, penetration, and kill. Examples include lightweight armor, vehicle-mounted mine detection, and signature management.
- **Information Assurance**—Technologies and investments that ensure the confidentiality, integrity, and availability of the systems and the data that they share.
- **Advanced Simulation**—Simulation tools to provide increasingly realistic environments and systems support acquisition, requirements, and training. This includes technologies for networked simulations, embedded training, constructive simulations,

virtual environments, and range systems for live use.

S&T Priorities

The near-term priority is on maturing and demonstrating critical technologies for the Objective Force, with major emphasis on FCS. These technologies will provide the foundation for accelerated acquisition programs to meet the timetable of the Army vision. Key areas of investment include lethality, survivability, C4ISR, Soldier system-of-systems, semiautonomous air and ground robotic vehicles, human engineering, reduced logistical burden, Soldier training and medicine. Advanced technology development (6.3) provides mature technologies for rapid insertion into Army acquisition programs, whether they are new systems or product improvements.

The mid-term focus is on developing and demonstrating block upgrades for the FCS and new capabilities for the Objective Force. Investments that will provide transition products in the mid term are currently being made in applied research (6.2) programs, in areas such as lethality, survivability, C2 on-the-move, advanced simulation, personnel technologies, and logistics demand reduction; this research includes the development of components, models, and new concepts through in-house and industry efforts.

In the far term, revolutionary new warfighting concepts will be enabled by current Army investments in basic research (6.1). The products of current investments in areas such as nanoscience, new cryptographic algorithms, biometrics, smart structures,

and materials-by-design will enable significant enhancements that maintain technological overmatch in our land combat forces.

Future Combat Systems— Establishing the Requirements

In late October 2001, TRADOC completed work on the Mission Needs Statement (MNS) and Statement of Required Capabilities (SORC) for the FCS. These documents, along with the Units of Action and Units of Employment Operations and Organization concept papers, will form the foundation upon which future development of the Objective Force capability is based.

The requirement for a FCS is driven by the evolving operating environment and capabilities-based threats, combined with the need for a full spectrum dominant force as described in the Defense Planning Guidance, *Joint Vision 2020*, and the Army Vision. Clearly, the Army must be capable of effective response against both modernized conventional and unconventional forces employed in asymmetric strategies and tactics. The FCS mission need has application throughout the range of conflict from peacekeeping missions to major theater war. (*Figure 20*)

Army FCS will enable the Objective Force Units of Action to dominate ground combat across the full spectrum of operations and significantly enhance their

ability to conduct decisive tactical maneuver. The FCS directly contributes to the combat battalion's ability to close with and destroy enemy forces, seize terrain, protect territories and civilian populations from hostile forces, and enforce the terms of sanctioned agreements for stability and support operations. The FCS will provide ground forces with a dominant fighting System of Systems with assured overmatch for conducting standoff attack and close combat assault against any threat and in any terrain. It will be highly deployable and sustainable to meet requirements articulated in the Objective Force and Unit of Action Operation and Organization (O&O) documents.

Request for Proposal—FCS

On 2 November 2001, the Draft Solicitation for the FCS was posted on the Defense Advanced Research Projects Agency (DARPA) web page to facilitate review by industry. The final solicitation was issued on 21 November 2001. The Defense Advanced Research Projects Agency (DARPA) and the Army have issued an "Other Transactions for Prototype" draft solicitation for the Concept and Technology Development (CTD) and the Systems Development and Demonstration (SDD) Phases of the Future Combat Systems Program. DARPA intends to award one agreement for the CTD phase in the late February 2002 timeframe to a Lead Systems Integrator.

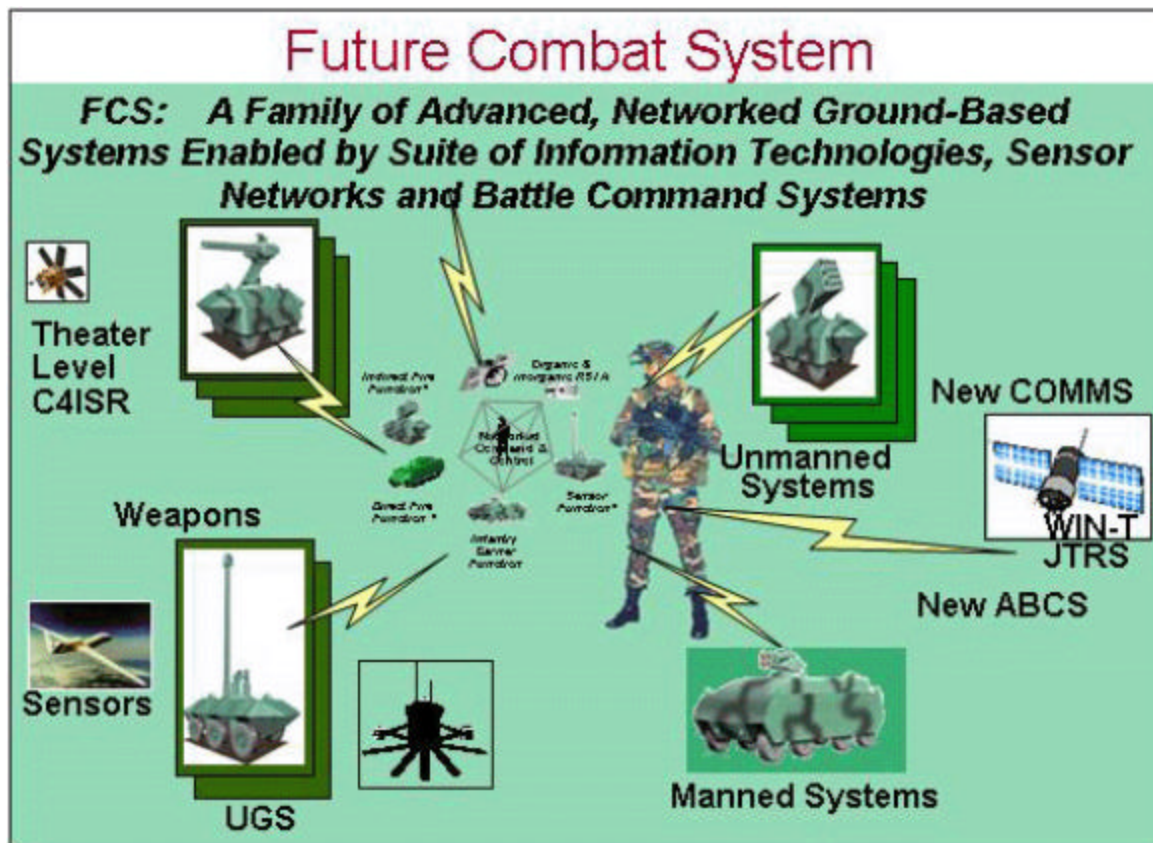


Figure 20. FCS

PB03 Implementation

To support the Army Vision and accelerate the pace of Transformation to the Objective Force, the Army is funding almost \$7.9 billion of S&T in the FY03-07 planning period, with over 95% of this targeted for the Objective Force. This amounts to a \$167 million increase S&T funding from the PB02 funding levels. This will adequately fund all of the Army's critical S&T requirements to begin fielding the first Objective Force units by the end of the decade. In addition to its own S&T funding, the Army has entered into a joint venture with DARPA, in which DARPA provides an additional \$431 million of S&T funding from FY00-05 to develop key FCS technologies. Approximately 40% of the S&T

investment is for FCS. The first major milestone on the path to fielding the Objective Force capabilities is the FCS Milestone B decision targeted for 2003. The Army leadership will review the status of technologies currently under development for the FCS and determine their maturity to enter SDD. In addition, S&T efforts will continue to feed block improvement to the initial Objective Force capabilities that the Army will field this decade. The Army will also continue to leverage industry and universities in order to maximize its return on S&T investment dollars.

The Army has made a large down payment towards the FCS SDD phase by funding an additional \$3.2 billion of its known requirements. During the FY03-07 planning period, the Army has

accelerated its acquisition strategy for the FCS and now intends to use a lead system integrator to prepare for a Milestone B decision in FY03, production in FY06, first unit equipped (FUE) in FY08, and initial operational capability (IOC) in FY10. As a result of this change and to ensure we achieve IOC by FY10, the Army expects its FCS requirements to increase. In order to ensure continued acceleration of its Transformation momentum, the Army will be seeking additional resources from DoD and Congress.

Comanche is the Army's armed reconnaissance helicopter and light attack weapon system of the future. It is a lethal, survivable, agile, versatile, affordable, responsive, deployable, and sustainable aircraft that is the centerpiece of the Army's Aviation Modernization Plan and the first Objective Force platform to be fielded. The Army has fully funded Comanche in the FY03-07 Plan based on a production rate of 62 aircraft per year. Additionally, the Army has added funding in FY07 in order to begin increasing to a planned production rate of 96 aircraft per year in FY10.

The Army is committed to providing the individual Soldier with the best equipment to meet the challenges of the new operational environment. The Army strategy is highlighted by the Land Warrior (LW), a first generation integrated fighting system for the individual Soldier that bridges to the Objective Force Warrior (OFW). Current funding procures and fields LW for the Ranger Regiment and the six IBCTs by FY08. The Science and Technology OFW program will provide the next generation of capabilities beyond LW with the goal of fully

integrating the Soldier with FCS and the Objective Force. OFW development and fielding will be concurrent with FCS.

The Army has fully funded the Crusader program. Given previous force structure reductions and projected future requirements, the Army considers the Crusader program as crucial to its future readiness. Crusader ensures the Army can achieve tactical agility and dominate overmatching fires. Only Crusader can meet the demands of rapidly moving offensive operations. It allows for decentralized employment of our fire support assets and responsive close supporting fires fully integrated with supported maneuver forces. The termination or reduction of this program cannot be accomplished without inducing an unacceptable level of risk to both its mid- and far-term warfighting ability.

Interim Force

The Interim Force will fill a strategic and operational capability gap, while simultaneously complementing the Legacy Force, by providing the CINCs with a rapidly deployable, tactically superior force capable to meet future operational requirements. Two combat brigades are presently in the process of converting to IBCTs, culminating with the fielding of the IAV. Four additional IBCTs have also been announced and are programmed for fielding.

Interim Armored Vehicle

Planned procurement is for 2,131 vehicles consisting of two variants: Infantry Carrier Vehicle (ICV) and Mobile Gun System (MGS). The program is

adequately funded for six IBCTs, or one a year from FY 2002 to FY 2007. Once initial milestones are achieved, the IAV can be processed to Milestone C and get approved for Full Rate Production of the remaining three brigades. Next milestone to successfully achieve is completing the Initial Operational Test and Evaluation. This is another evaluation looking at how the IAV operates within the Interim Brigade Combat Team (IBCT). Finally, the last major milestone is May 2003, when the first IBCT will reach Initial Operational Capability (IOC). IOC will be achieved after the 1st IBCT successfully completes a deployment and certification exercise at the Joint Readiness Training



Figure 21. IAV

Center. (Figure 21)

PB03 Implementation

The Army has allocated over \$6.4 billion through FY07 to field six IBCTs. The FY03-07 Plan fully funds the Interim Armored Vehicles, provides an additional \$912 million in funding for the support equipment associated with the six IBCTs, funds an additional \$106 million for ammunition for the IBCTs, and provides \$400 million for IBCT Military Construction (MILCON). These units are being fielded in complete brigade sets to

include the MILCON associated with the fielding of this equipment.

Legacy Force

It is the current Legacy Force that guarantees the Army's near-term warfighting readiness. Since the Army skipped a procurement generation (1990s and 2000s), the age of many of the current force's combat systems often exceed their expected service life (29 years for most Army systems). Today 75% of the Army's major combat platforms exceed their expected system half-life. In order to maintain operational readiness and to stabilize the growth in operating and support costs of the Army's aging weapon systems, the Army has begun to recapitalize and selectively modernize its current force.

Equipping Initiatives

Recapitalization

Recapitalization is the rebuilding and upgrading of existing weapon systems and/or tactical vehicles. The goal is to ensure operational readiness, a near zero-time/zero-mile condition for selected priority systems, and stabilize the growth in operating and support costs. The measure of success is in managing fleet age at or below one-half its expected service life. When operationally necessary and financially prudent, the Army will selectively upgrade systems to maintain combat overmatch capability and a technological advantage. Recapitalization efforts will focus on improving the reliability, maintainability, safety, and efficiency of the Army's

current systems at a lower cost than procuring new systems

The Army's requirement to recapitalize all of its systems is significant, and the requirement is clearly unaffordable given the current fiscal constraints and planning guidance. The Army, therefore, has decided to focus its resources on only those systems and units that are absolutely essential to maintaining today's warfighting readiness while taking risk with other systems and other parts of the force. In order to develop an affordable and executable recapitalization program, the Army has prioritized seventeen of its systems that must be recapitalized to a near zero-time/zero-hour standard. The Army's "Prioritized Recapitalization Program", in addition to selecting only 17 systems, also primarily focuses its resources on the Counterattack Corps, taking risk in the Army's remaining units.

The Army has reduced its recapitalization requirements by over \$2.4 billion from PB02 and increased its funding by approximately \$3.7 billion for those 17 systems that belong to specific units. As a direct result, 100% of the Army's "Prioritized Recapitalization Program" is funded compared to 70% in PB02 for those same systems. This program, which includes the Army's major combat systems (the AH-64 Apache, the UH-60 Blackhawk, the CH-47 Chinook, the M1 Abrams, the Patriot air defense system, and the M2 Bradley) is fully funded.

(Figure 22) While the recapitalization program approval process has helped the Army focus its resources, reduce

requirements, and develop cost effective, funded programs, the Army must still remain aware of the inherent risk in this program. Even for these 17 systems, the Army still has significant unfunded requirements for systems that reside in other units beside the Counterattack Corps. The majority of the remaining systems will exceed an average half-life by FY10 and a large proportion of those systems will not be upgraded or rebuilt. As a result of its recapitalization strategy, the Army has provided critical combat capability to the Counterattack Corps, accepted risk in its remaining units, and established a process that will help free up resources for the Interim and Objective Forces. The Army will continue to review the scope of its recapitalization efforts each quarter and make adjustments as appropriate.

Modernization

The Army focused the modernization of its Legacy Force by identifying and prioritizing those systems that have applicability to the Objective Force. These systems can be classified into two categories: those that are part of the Legacy Force and will transition to the Objective Force (e.g., the Family of Medium Tactical Vehicles (FMTV) and Javelin) and those that are being built specifically for the Objective Force, but can be used by the Legacy Force (e.g., the Tactical Unmanned Aerial Vehicle (TUAV) and High Mobility Artillery Rocket System (HIMARS)). By doing this, the Army is ensuring that its resources are efficiently spent on systems that will benefit it both now and in the future.

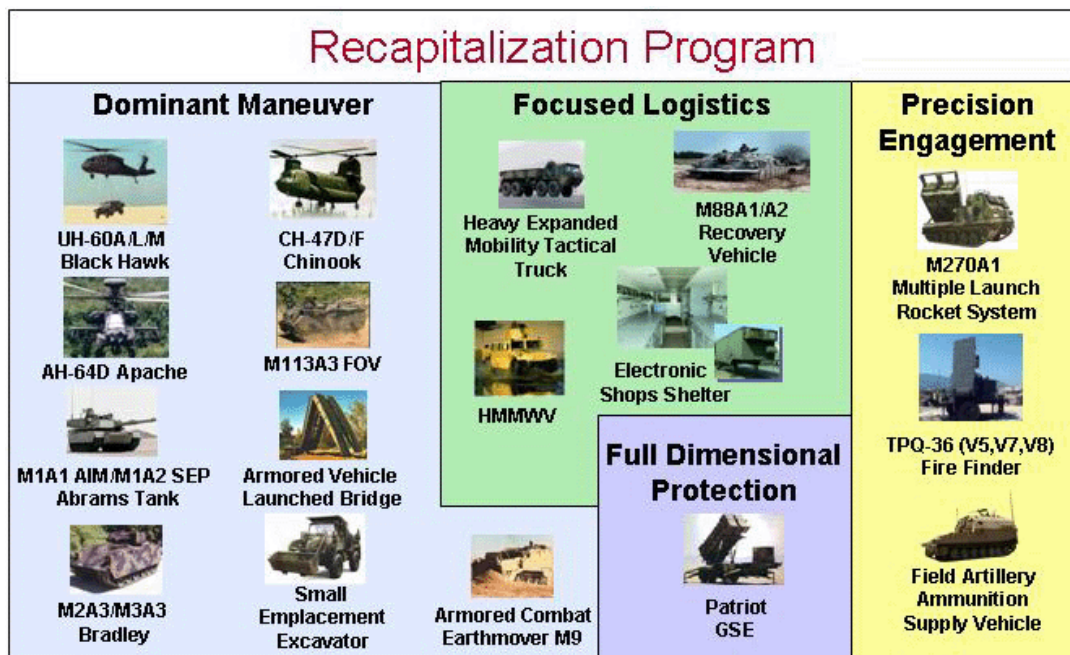


Figure 22. Recapitalization

In an effort to accelerate the Transformation to the Objective Force, the Army accepted risk by focusing modernization efforts on selected units and capabilities. Only the Counterattack Corps, some XVIII Airborne Corps units, the Interim Force, and a limited number of other units will receive system upgrades and enhanced capabilities. In order to protect critical Objective Force development and Interim Force capabilities during FY03-05, it was necessary to terminate or restructure legacy systems during the FY03-07 planning period. The Army continues to take risk in its Legacy Force in order to accelerate its Transformation efforts.

In 1988, the Army had seven different helicopters. When the Comanche is fully fielded, the Army will have only three (Comanche, Black Hawk, and Chinook). This will result in a large savings in both training and logistics. By eliminating Vietnam-era aircraft from the force, AH-1

Cobras this year and UH-1 Hueys by FY04, the Army has freed resources to support the recapitalization of AH-64 Apache, UH-60 Black Hawk, and CH-47 Chinook aircraft. This will reduce the number of aircraft in the Army inventory by 1,131 aircraft (from 4,533 in FY01 to 3,402 in FY07), a reduction of 25%.

PB03 Implementation

The Army continues to take risk in its Legacy Force recapitalization and modernization programs. Over the past two planning periods, the Army has terminated or restructured 18 different programs that resulted in \$9 billion in savings being reinvested in Army Transformation. The FY03-07 Plan continues this trend. Although the Army has added over \$4.1 billion for legacy type equipment over the planning period (all in FY06 and 07), the Army continues to scrutinize its investments in the Legacy Force. Funding was sustained for high priority systems that will transition to the

Objective Force, increased for associated support equipment that will be fielded to the Interim Force, and reduced for systems that are not essential to Transformation. The result of this review was that the Army terminated 18 additional programs and reduced 12 others for a total reallocation of \$5.8 billion. Additional fiscal constraints and DoD guidance resulted in a further decrease of over \$450 million of funding for Legacy Force systems.

As a result of the terminations and restructurings, the Army investment profile has undergone a paradigm shift over the

past three planning periods. Only about 16% of the Army's modernization funding is devoted to systems that will be used solely by the Legacy Force, with over 50% of total funding being devoted to procuring systems that can be used by the Legacy Force and also transition to the Objective Force or be used directly by the Interim Force. As the Army looks for savings in future years, there are very few remaining legacy-only systems remaining whose reductions would not seriously impair the readiness of the current force, which remains the guarantor of near-term warfighting readiness.

Summary and Conclusions

As a result of the horrific attacks in September 2001, the United States is now at war in what may prove to be a long-term struggle. The Army, likewise, is preparing itself for battle as an integral part of this campaign against terrorism. Army Transformation, which was initiated in October 1999 in anticipation of future missions in a changed strategic environment, has now taken on an even greater urgency in light of this immediate challenge. As a result, the Army is making every effort to accelerate the ongoing Transformation process in order to field these new capabilities as soon as possible. The goal of Transformation is to ensure that the world's preeminent land force maintains and improves its ability and demonstrated will to fight and win our Nation's war decisively—now and in the future. To achieve this goal and maintain its strategic relevance to the Nation, the Army is focused on fielding units that are capable of fighting and winning against

any potential adversary in a rapidly changing, unpredictable, and asymmetrical battlefield.

The *Army Modernization Plan* outlines the intent and strategy of building these future combat units that will have the agility and versatility to succeed against any opponent. It also provides the overarching strategy of maintaining the current force to ensure that it maintains the essential readiness to defeat any threat while the Army is transforming itself. As a bridge to the future Objective Force, the Interim Force will increasingly ensure that the Army can respond rapidly to any contingency with increased responsiveness and deployability. The *Army Modernization Plan* identifies the requirements and current plans for fielding these important new capabilities.

The *Army Modernization Plan* focuses modernization efforts through the three

paths or vectors of Transformation, and it describes the overall modernization strategy as well as the key processes that will facilitate the building of combat-capable units. While the materiel aspects of modernizing and transforming the Army are a central theme of the *Army Modernization Plan*, it is essential that modernization be fully coordinated, balanced, and synchronized across the critical requirements of doctrine, training, leader development, organizations, and Soldiers. Respective annexes are devoted to a specific discussion of these essential areas. Above all else, and just as is true today, people remain central to the success of the transforming Army.

The Army has accomplished much since the Army Vision was announced in October 1999, and the Army leadership has taken prudent risks and made hard decisions in order to make Transformation succeed. In addition, the Army continues to balance the requirements for transforming with imperatives to maintain current readiness, fulfill new operational commitments, and support homeland security. The end result for FY03 is a balanced Army program that accepts risk where possible and devotes resources to the highest priorities.

The *Army Modernization Plan* is submitted in conjunction with the release to Congress of PB03, which continues to implement and fund Army Transformation. Specifically, the Army's portion of the PB03 submission provides funding for the following:

- Fully funds procurement of the Interim Armored Vehicles and associated fielding in Unit Sets for six IBCTs;

provides additional resources for support equipment, ammunition and Military Construction.

- Funds procurement and fielding of Land Warrior for the Ranger Regiment and six IBCTs by FY08..
- Funds almost \$7.9 billion for Science and Technology over the length of the Future Years Defense Plan (FYDP), an increase of \$167 million from last year.
- Funds \$5.1 billion over the FYDP for the System Development and Demonstration phase of the Future Combat Systems; accelerates acquisition strategy by using a Lead Systems Integrator to ensure fielding the Objective Force in this decade.
- Fully funds the procurement of Crusader and Comanche.
- Accelerates and fully funds the development of the Warfighting Information Network—Tactical, the next generation of tactical and operational communications.
- Fully funds the Army's "Prioritized Recapitalization Program" of 17 systems.

Shortfalls for support of Transformation, however, continue to exist in PB03 in the following areas for implementation of Army plans through FY07:

- Does not adequately fund the limited modernization of the Legacy Force.
- Does not sufficiently fund the recapitalization of the remainder of the force that is not a part of the

“Prioritized
Program”.

Recapitalization

The Army has continued to make major changes in its plans and resourcing in support of ongoing and future Transformation. The Army has made difficult decisions during the budget planning process in order to meet the urgent requirements of the current security environment while at the same time assuming appropriate risk to sustain the momentum of Army Transformation. Balancing risk—with the exigencies of readiness, new operational requirements,

homeland security and Army Transformation—will remain an overriding imperative for the future.

Thus far the Army has made significant progress on its path to a revolutionary improvement in the capability and responsiveness of the future force. Sustained support and funding will be essential in reaching this goal and simultaneously fulfilling the Army’s unalterable commitment to the Nation’s security.

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